Metal detector survey of the West Cemeteries, Aska in Hagebyhöga, Östergötland

Report on fieldwork in September 2020. Listed ancient monuments L2012:8383 = Raä 36, L2012:8298 = Raä 1, L2012:7676 = Raä 2, Vadstena kommun.
Lst dnr 431-6367-20.

By Martin Rundkvist & Julia Schulte Koskinen, 16 January 2021

Background & results

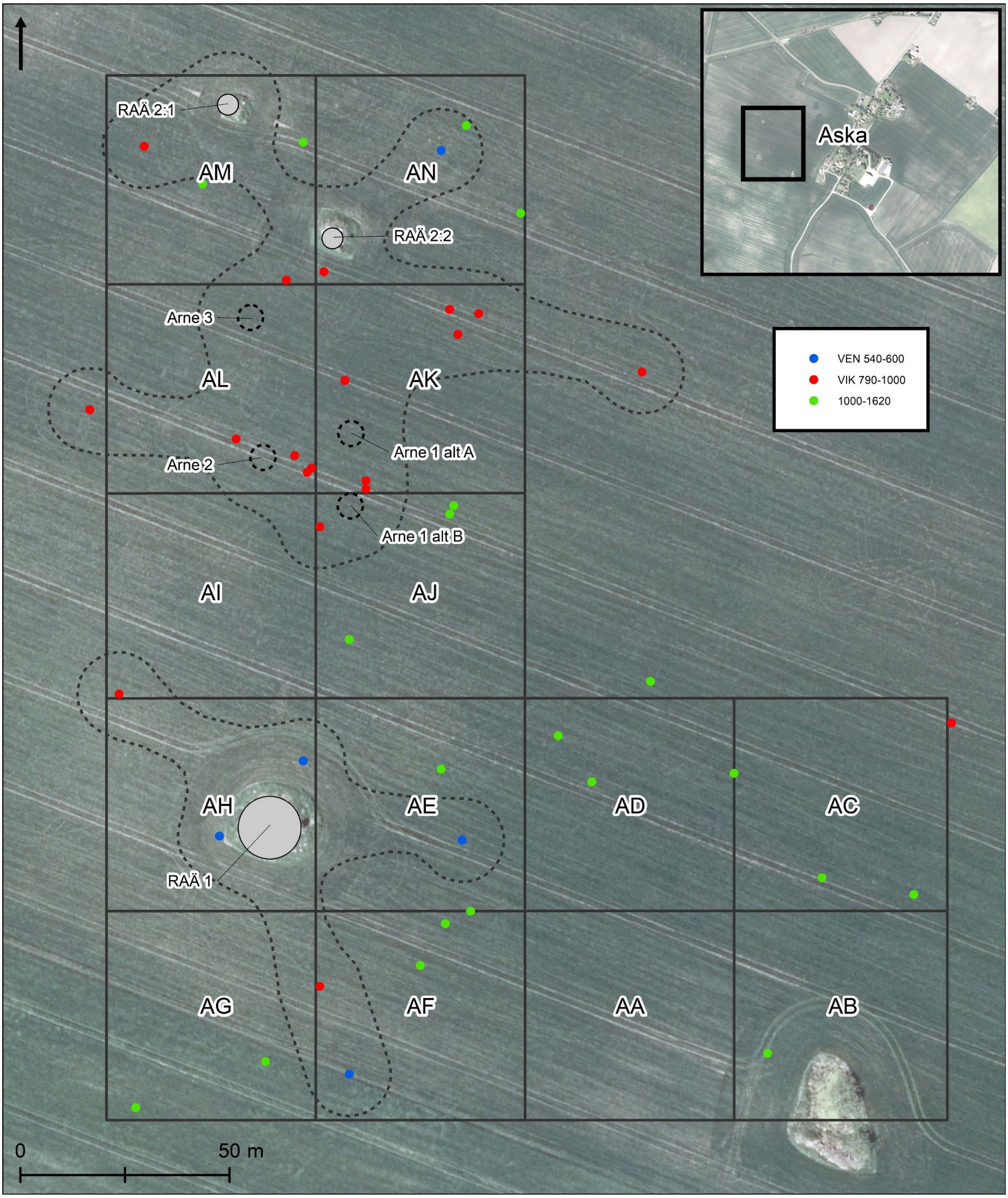
The West Cemeteries at Aska came to the attention of archaeology in 1920, when the landowner removed some cairns in the northern one and uncovered the richest Viking Period female burial known from Östergötland. The grave, dating from c. AD 975, contained a set of silver pendants that were about 200 years old when buried, including the famous Lady Pendant. Ture J. Arne excavated what was left of the cairn and two nearby ones, graves Arne 1-3 on the present site plan, all three cremations. He published the finds in 1932.

The oldest plan of the site is found on a 1688 *geometrisk avmätning* map. At that time, much of the site had already been ploughed over, and the map shows only five surviving impediments, all likely groups of cairns or single ones. A 1767 *storskifte* map shows seven, and an 1861 *laga skifte* map shows 15. This successive increase reflects the improved accuracy of the mapping and possibly fragmentation of earlier islands in the field. The main change in the land use over the 183 years 1688-1861 was that the area around the pond south-east of the graves was taken into cultivation too. Today, only three mounds or cairns survive on the field, and there are no visible surface features on the site of the 1920 find. The pond is now only a fraction of its 1767 size.

On 11 and 13 September 2020, Rundkvist directed 121.7 person hours of metal detecting across the assumed extent of the cemeteries, as deduced from where the surviving monuments and the registered coordinates of the 1920 site were. The team made rich finds in two clusters, each with surviving monuments, separated by over 50 metres of unproductive ploughsoil.

The north cluster yielded much fragmented copper-alloy jewellery from the Middle Viking Period c. AD 875-1000. The south cluster offered four brooches from the Early Vendel Period c. AD 540-610 and two finds from the Middle Viking Period, but nothing from between these phases. None of the finds show any damage from the cremation pyre. The Early Vendel Period brooches probably mark a farmstead site as inhumation burial is almost unknown in that period here. The northern find cluster probably represents ploughed-out burials. It is difficult to tell what the rite was since the 1920 graves were cremations but the furnishings had not been on the pyres with the bodies.

As for finds from the period AD 1000-1600, the team found a small assortment of everyday objects. Only one object from after 1600 was collected, a silver coin struck for Carolus IX no later than 1612.



50-metre grid in RT90. Note the pond partly in square AB. Plan by Jon Lundin.

Methodology

Rundkvist divided the area into fourteen 50-metre squares on the RT90 grid and recorded how many person-hours of metal detecting were done in each. The ground conditions were excellent, recently ploughed and harrowed, and the weather was good too. The average search intensity was 8.8 person-hours per 2500 sqm or 3.5 person-hours per 1000 sqm. All finds were pinpointed with a hand-held hiking GPS. The detectorists avoided digging on iron signals. The team reburied most of what Rundkvist could not date and everything he could date to after 1600, except for one silver coin. The three surviving monuments were not touched.

Sq	**Finds**	**Person hours**	**Area sqm**	**Finds / hr / 10,000 sqm**	**Pers hrs / 2500 sqm**
AA	0	6.0	2500	0.0	6.0
AB	1	5.8	2277	0.8	6.4
AC	3	13.9	2500	0.9	13.9
AD	2	7.7	2500	1.0	7.7
AE	2	10.6	2500	0.8	10.6
AF	5	8.0	2500	2.5	8.0
AG	2	9.7	2500	0.8	9.7
AH	2	12.1	2452	0.7	12.3
AI	1	7.0	2500	0.6	7.0
AJ	4	12.6	2500	1.3	12.6
AK	6	6.0	2500	4.0	6.0
AL	4	6.8	2500	2.4	6.8
AM	4	8.5	2479	1.9	8.6
AN	4	7.0	2479	2.3	7.1
Sum		121.7	34687		

The positioning of the search squares is a little odd in relation to the surviving cairns and to the ones investigated in 1920. Specifically, squares AA-AD may seem superfluous. They were metal-detected intensively because the person entering Arne's fieldwork into the Sites & Monuments Register had misunderstood the site plan in the 1932 journal paper. It features a dirt track that no longer exists, and apparently someone misidentified the track on Arne's plan with the main road through the village. When the team arrived on site, the Register had the rich 1920 jewellery burial Arne 1 pinpointed near the shared corner of squares AA-AD down by the pond, and Rundkvist did not check whether this was correct before marking out search squares. The team found very little here.

When Jon Lundin georeferenced Arne's plan for the present site plan he ignored the track and only used the surviving cairns. He found that Arne had not measured their relative positions very accurately, and so there are two main ways to fit Arne's plan to the the surviving monuments. This does not make a significant difference for the graves Arne 2-3. But it offers two possible positions for the rich grave Arne 1, 17.5 m apart (centre to centre).

Finds

Early Vendel Period AD 540-600

The oldest finds are five brooches from the earliest Vendel Period 540-600. They are four small equal-armed brooches and one Husby brooch. The equal armed brooches belong to Ørsnes' types F1, F2 and F4. The type F4 brooch has pale yellow glass inlay on its surviving terminal, which is rare. Four of these early brooches cluster around the large surviving cairn Raä 1. The little equal-armed brooch with inlay was found in an isolated position north-east of the surviving cairn Raä 2:2, not in the cluster of Middle Viking Period metalwork.

Five brooches without fire damage and nothing else from the 500s suggests a settlement site rather than a cemetery. Inhumation burial is exceptionally rare in Östergötland's Vendel Period. All three graves that have been excavated at the site were centuries later than these finds.

Middle Viking Period AD 875-1000

Rundkvist was motivated to investigate the site by finds from the Middle Viking Period made in 1920, and this is also the date of most collected finds from 2020. Arne found tortoise brooches of types P51:B1 and P52. The team found a complete but damaged P51:B1 brooch, eleven fragments of similar brooches, and the crown-like finial of a P52 brooch. Subtype P51:B1 belongs to the first half of the phase before c. 940, P52 belongs to the second half. There is no sign of P48, the last tortoise brooch type that was fashionable after Birka was abandoned but before the Late Viking Period and the Ringerike style began c. 1000. In other words, burial ceased at this cemetery a quarter century before the end of the Middle Viking Period.

Other Middle Viking Period finds are fragments of two silver filigree pendants (one of them spoon-shaped), part of an equal-armed brooch of Aagård's type III A:1 (which is almost exclusively found with P51 tortoise brooches in graves), the copper-alloy handle from a key whose iron business end has rusted away, and a pendant or small brooch in the shape of a Borre style eagle.

These finds suggest female burials, either inhumations or cremations where unburnt furnishings were added at interment. They do not cluster with the finds from after AD 1000. This must have to do with Christianisation and the end of furnished burial. The site of a little 11th century wooden church at Klåstad-Klosterstad is clearly visible across the fields from the site.

After AD 1000

The site’s oldest male dress accessories belong to the Late Viking Period after AD 1000. They are a piece of a Ringerike style strap end (the type with an 8-shaped beast) and a chevron-shaped decorative mount from an Oriental-style belt. The latter find might also belong to the Middle Viking Period, but not enough survives of its decoration to judge. The two mounts were found too far apart for them to belong to one burial.

A small padlock key shares their date or may belong to the 1100s. A small featureless spool-shaped ingot of debased silver (22.3 g) is difficult to date and does not cluster with the Middle Viking Period jewellery. Perhaps it also belongs to the 1000s or early 1100s.

Datable finds from the period 1200-1600 are three thimbles, a brass rowel from a spur, part of a brass pot, a decorated Gothic-style fragment, a butt mount from a table knife and an *attenpenning* coin from c. 1520. Only one object from after 1600 was collected, a silver coin struck for Carolus IX no later than 1612.

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Administrativia

County admin case number	431-6367-20
Municipality	Vadstena
Location	Aska in Hagebyhöga
Property	Aska 10:1
Site numbers	L2012:8383 = Raä 36 L2012:8298 = Raä 1 L2012:7676 = Raä 2
Site type	Two ploughed-out cemeteries
Type of fieldwork	Metal detector survey
Rationale	Research and outreach
Project director	Martin Rundkvist
Permit keeper	Östergötlands Läns Museum
County case administrator	Malin Svarvar
Fieldwork period	11 and 13 September 2020
Archiving	The documentation was compact and was transferred to digital media during fieldwork. There is nothing to archive in addition to this report.

Participants

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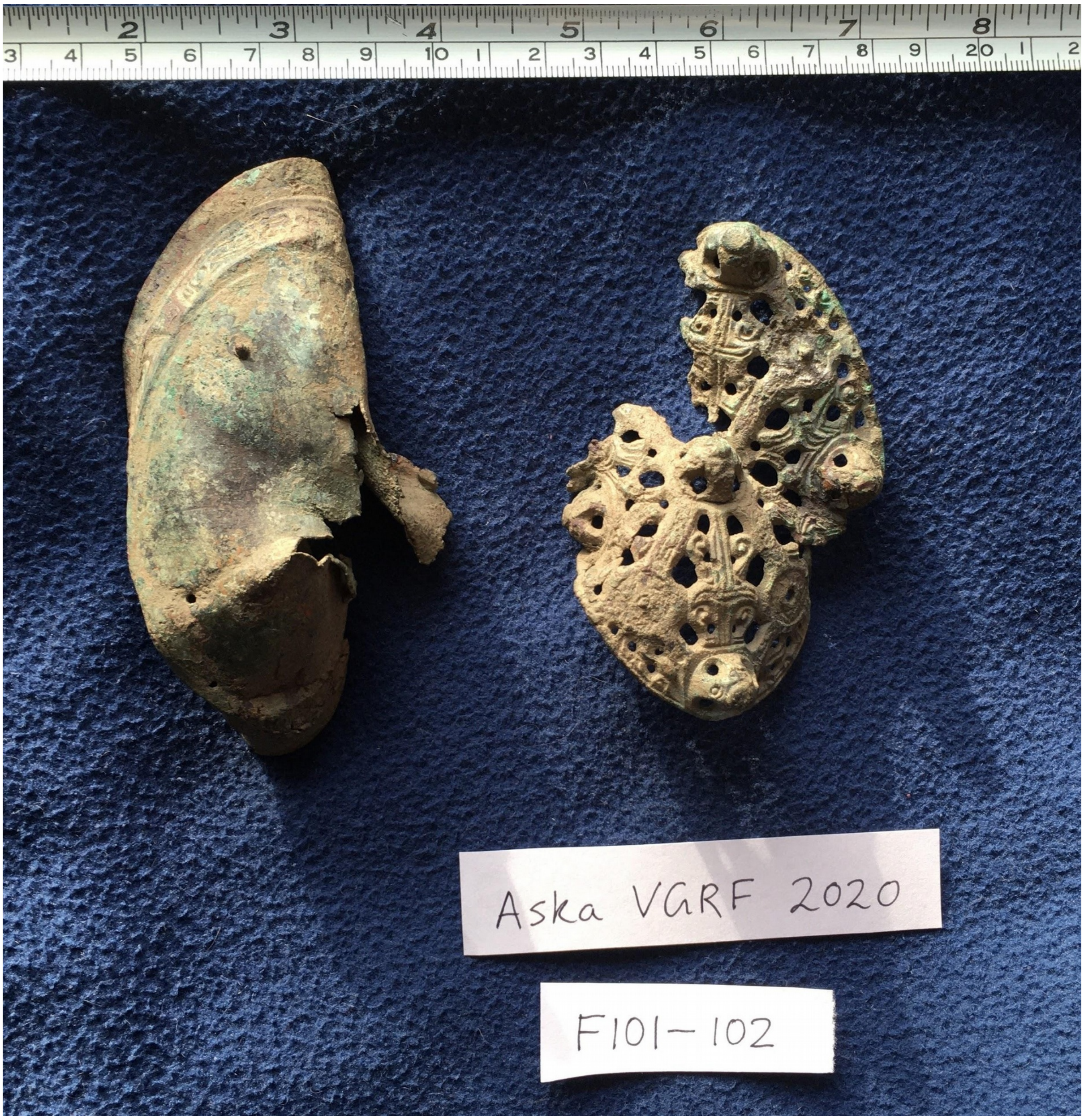
Svantesson Patrik
Tibell Anna-Lena
Westerberg Mattias
Österblad Magnus

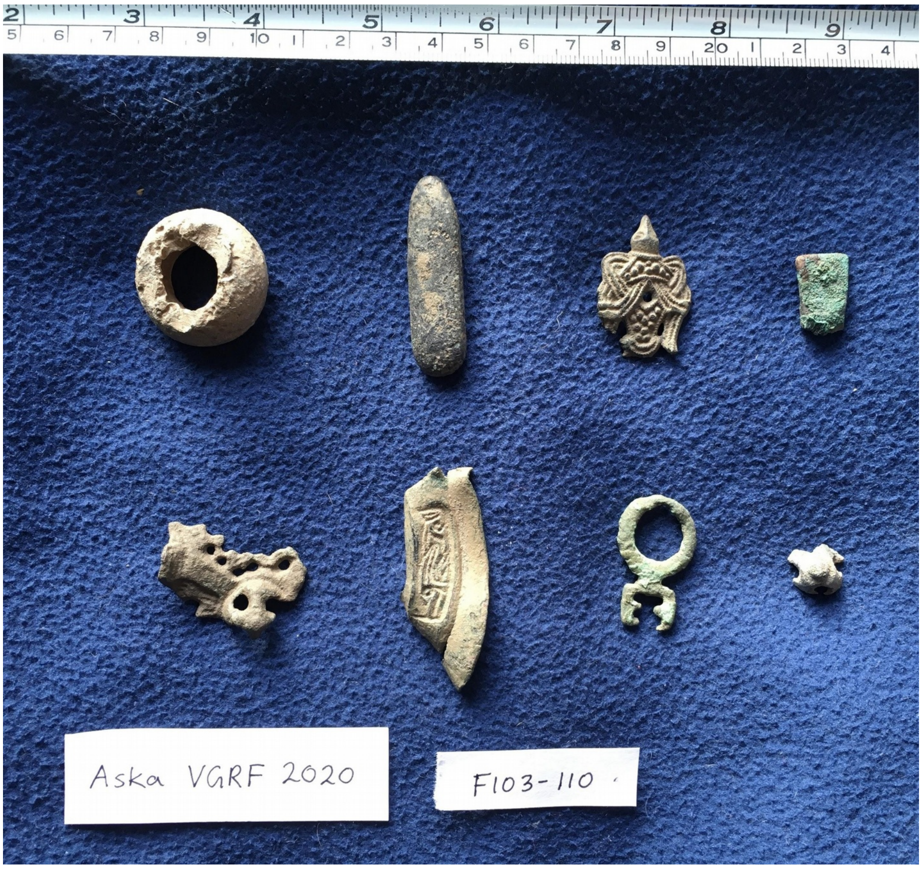
Finds list

Fno	**Mtrl**	**Object**	**Spec**	**Wt (g)**	**x**	**y**	**Date**	**Finder**
101	Cu	Tortoise brooch	P51 base Bd:a1	59.26	6481063	1451230	VIK2a	Uffe
102	Cu	Tortoise brooch	P51:B1 top shell	41.56	6481041	1451249	VIK2a	Blomqvist
103	Pb	Spindle whorl		55.63	6481046	1451281	?	
104	Ag	Ingot		22.30	6480914	1451355	?VIK	Olle
105	Cu	Eagle brooch		5.23	6481087	1451283	VIK2	
106	Cu	Strap end	Ringerike style	2.80	6481044	1451280	VIK3	
107	Cu	Tortoise brooch	Top shell	5.64	6481002	1451201	VIK2a	Erik
108	Cu	Tortoise brooch	P51 base Bd:a1	8.12	6481093	1451281	VIK2a	
109	Cu	Key		3.82	6480956	1451368	VIK3-MED	MÖ
110	Cu	Tortoise brooch	Top shell	1.95	6481070	1451195	VIK2a	
111		*Discarded*						
112	Cu	Handle fitting		8.87	6480991	1451306	?	
113	Ag	Ring		2.88	6480936	1451272	?	Matte
114	Cu	Thimble		4.71	6480952	1451390	MED	Håkan
115	Cu	Counterwasher		0.80	6480913	1451235	?	Frank
116	Cu	Thimble		5.39	6480980	1451314	MED	Frank
117	Cu	Tortoise brooch	P51 base Bd:a1	4.43	6481092	1451288	VIK2a	RÅ
118	Cu	Tortoise brooch	Top shell	2.78	6481076	1451256	VIK2	Olle
119	Cu	Tortoise brooch	P51:B1 top shell	6.00	6481050	1451260	VIK2a	RÅ
120	Cu	Key		14.27	6480992	1451400	VIK2	MGH
121	Cu	Tortoise brooch	Top shell	2.96	6481014	1451256	VIK2	PS
122	Cu	Tortoise brooch	P51:B1 top shell	5.75	6481054	1451247	VIK2a	Frank

123	Cu	Hook	Gilded	1.68	6480983	1451278	?	Olle
124	Cu	Tortoise brooch	P52 finial	8.99	6481058	1451244	VIK2	Uffe
125	Cu	Tortoise brooch	Top shell	6.48	6481055	1451248	VIK2a	Kenth
126	Ag	Pendant	Filigree, spoon-shaped	1.10	6481052	1451261	VIK2	
127	Cu	Fragment	Flat	2.11	6481003	1451328	?	Frank
128	Cu	Brass pot frag		16.86	6480981	1451348	MED-EMOD	MGH
129	Cu	Eq-arm brooch		7.29	6480910	1451255	VEN1	Matte
130	Cu	Eq-arm brooch		5.78	6480985	1451245	VEN1	Erik
131	Cu	Husby brooch		6.00	6480966	1451282	VEN1	M Lander
132	Cu	Table knife butt mount		3.53	6481133	1451246	MED-EMOD	MGH
133	Cu	Fragment	Gothic style	2.75	6481124	1451222	MED 1250-1500	
134	Cu	Spur rowel		1.29	6481116	1451298	MED 1200-1500	
135	Cu	Eq-arm brooch	III A:1	9.69	6481133	1451208	VIK2	M Lander
136	Cu	Strap mount	Oriental	2.37	6480931	1451248	VIK2-3	MÖ
137	Cu	Thimble		3.52	6481137	1451286	EMOD	MÖ
138	Cu	Tortoise brooch	P51 base Bd:a1	2.34	6481102	1451251	VIK2a	M Lander
139		*Discarded*						
140	Ag	Coin	Carolus IX 1 öre	1.29	6480949	1451284	EMOD 1609-12	
141	Cu	Eq-arm brooch	Glass inlay	5.65	6481131	1451279	VEN1	RÅ
142	Cu	Eq-arm brooch		8.16	6480968	1451224	VEN1	MÖ
143	Cu	Fragment	Decorated	0.87	6480903	1451204	?	
144	Ag	Pendant	Filigree	1.49	6481100	1451242	VIK2	
145	Ag	Coin	Attenpenning	2.44	6480946	1451278	MED 1520	
146	Cu	Tortoise brooch	Top shell	1.34	6481077	1451327	VIK2	

Finds photographs

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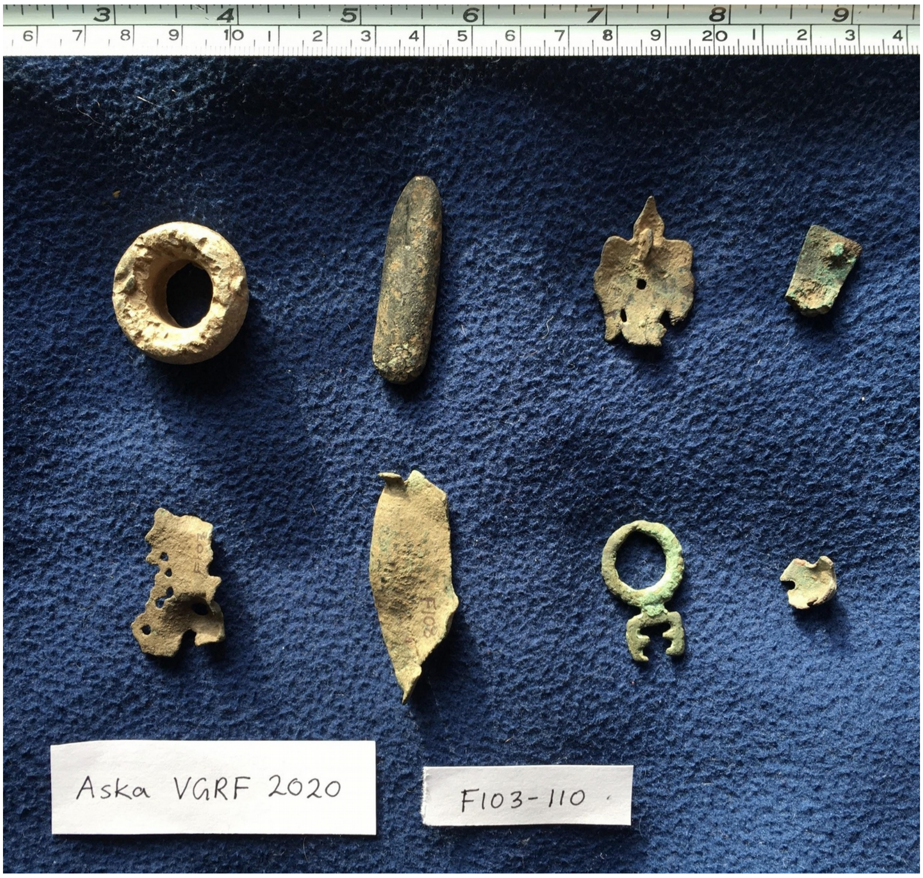
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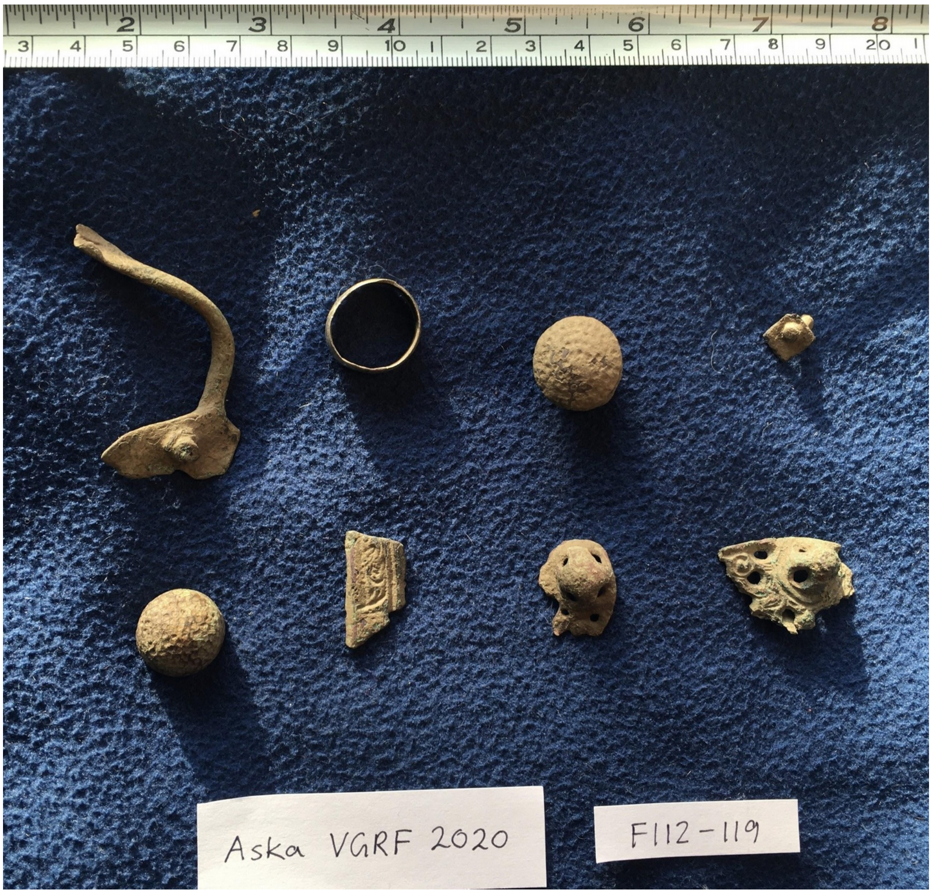
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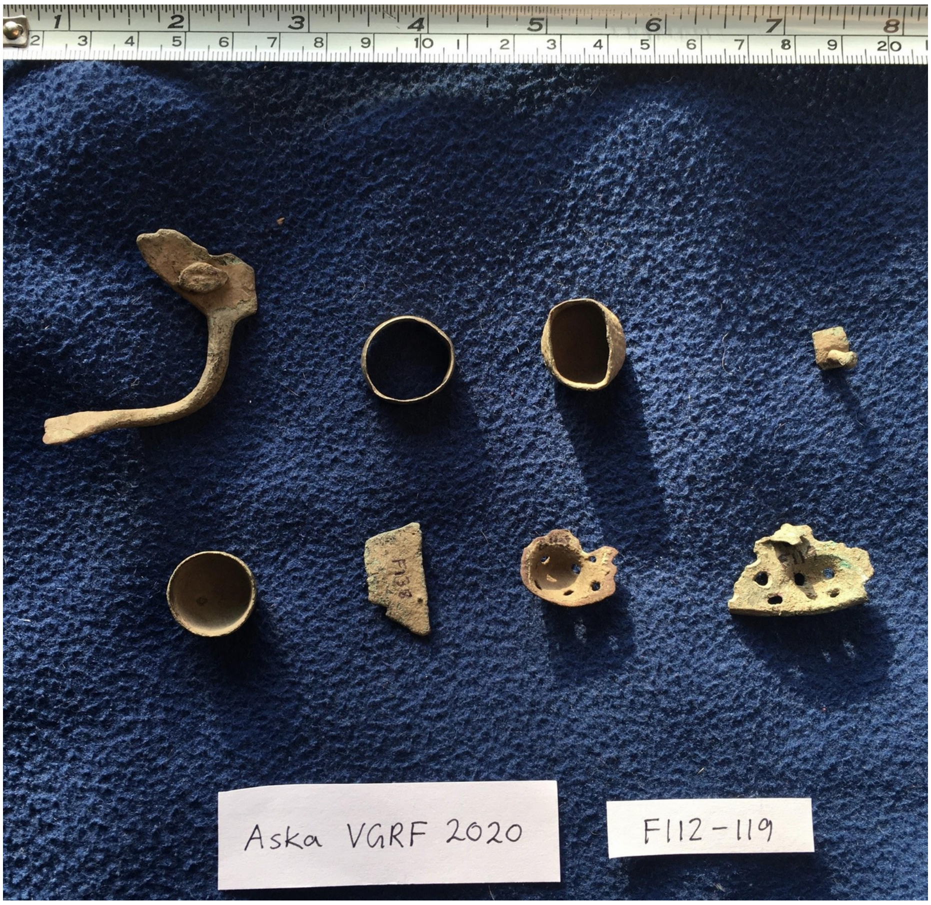
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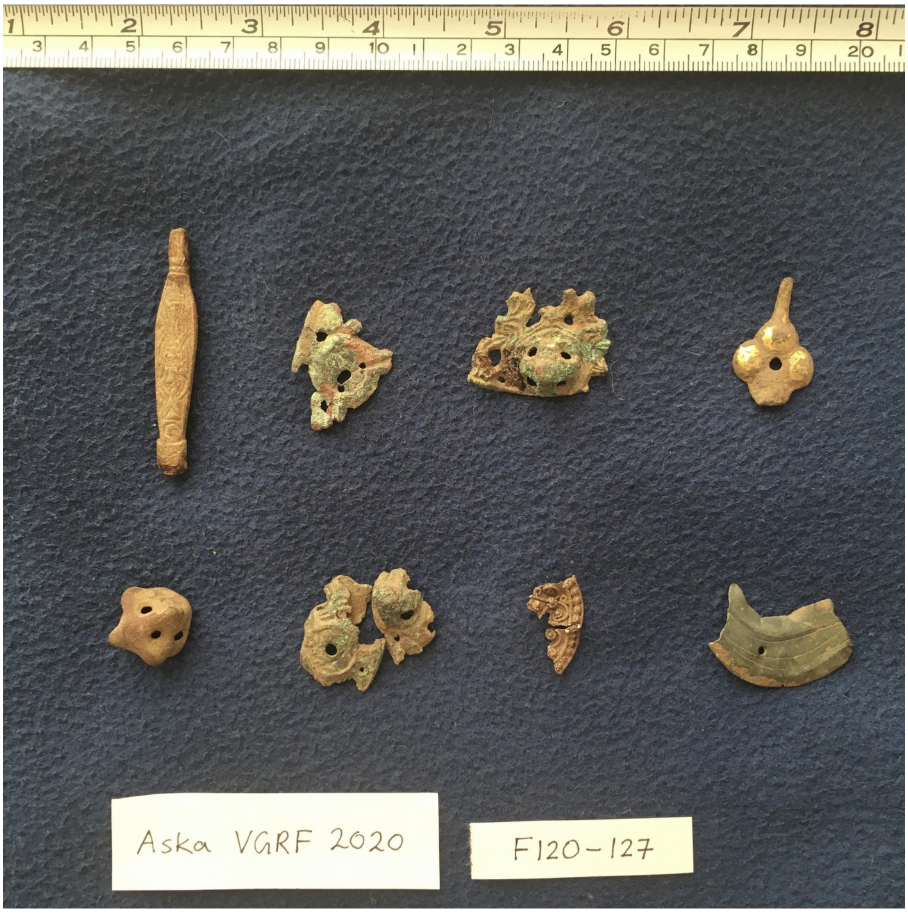
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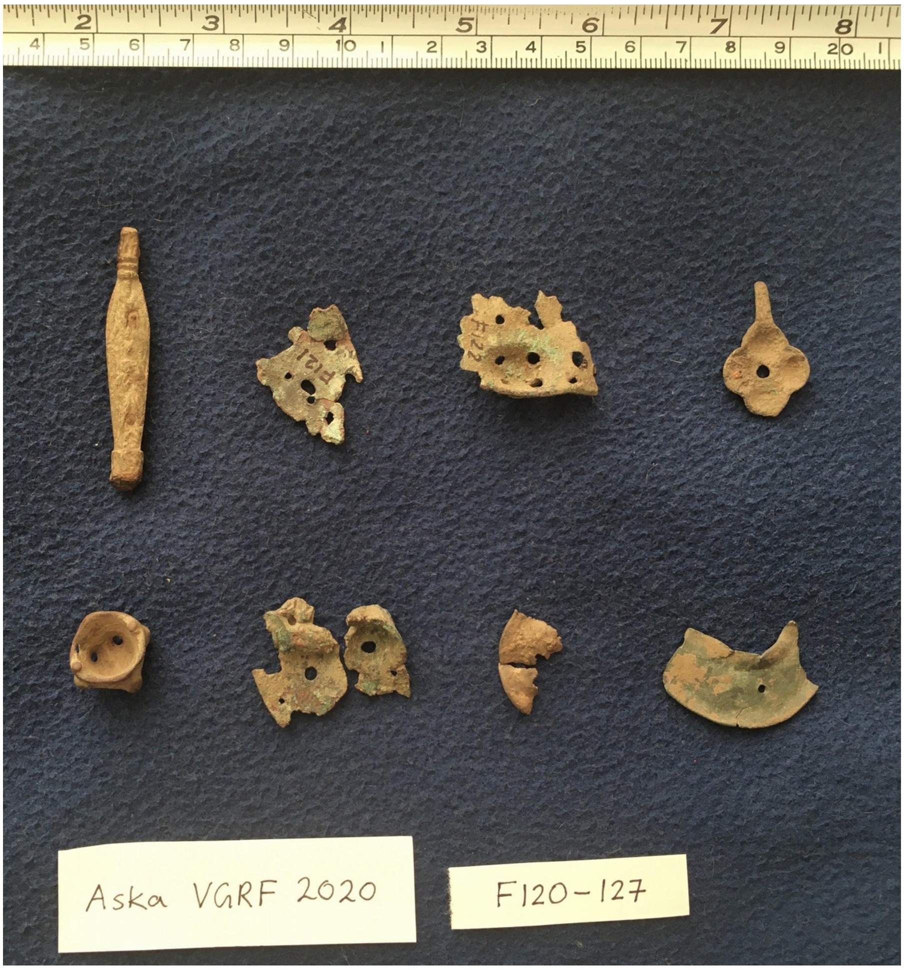
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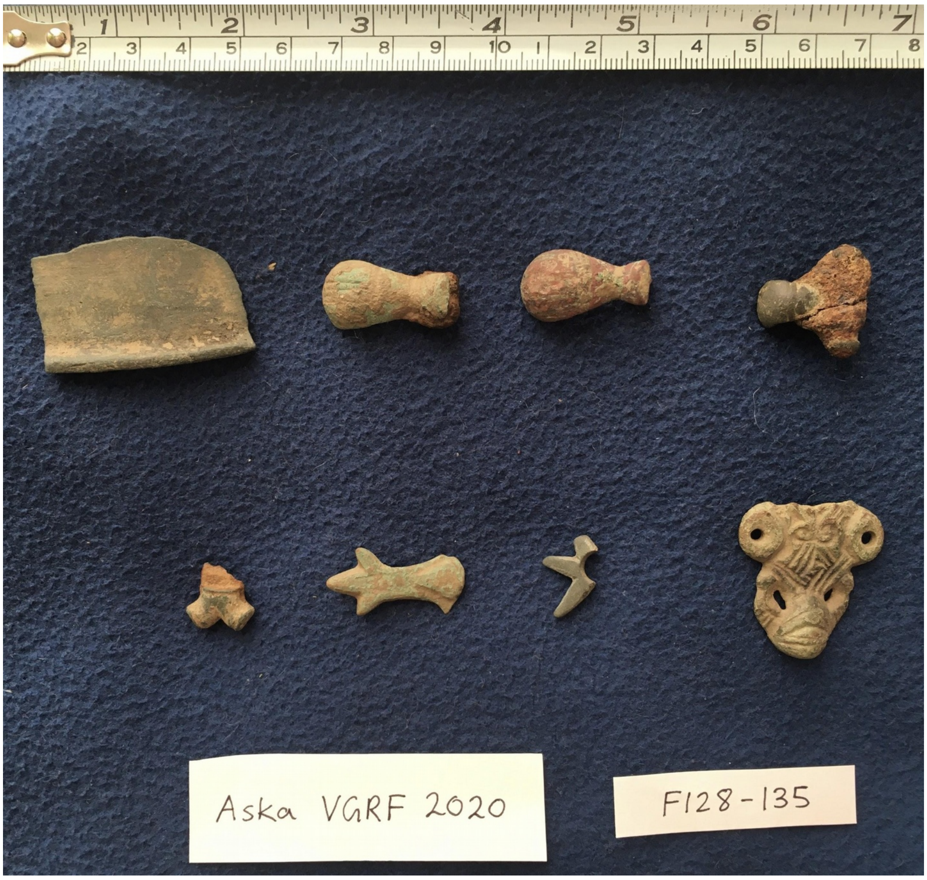
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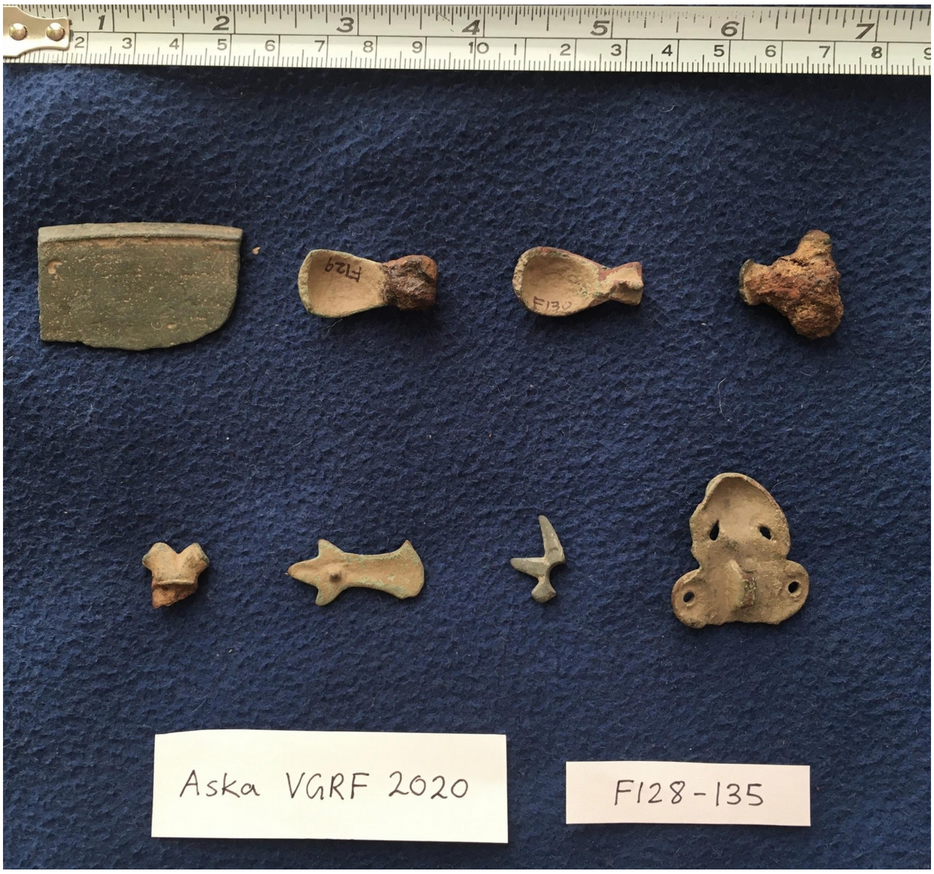
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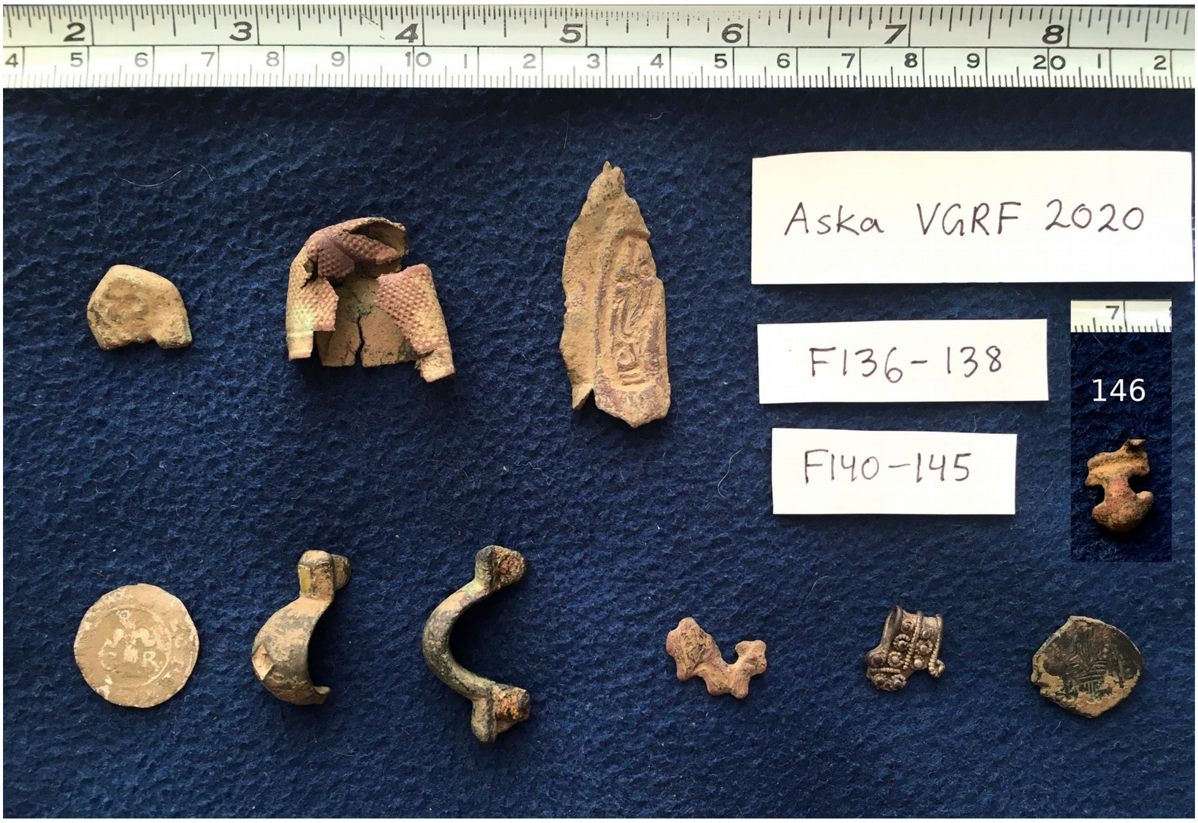
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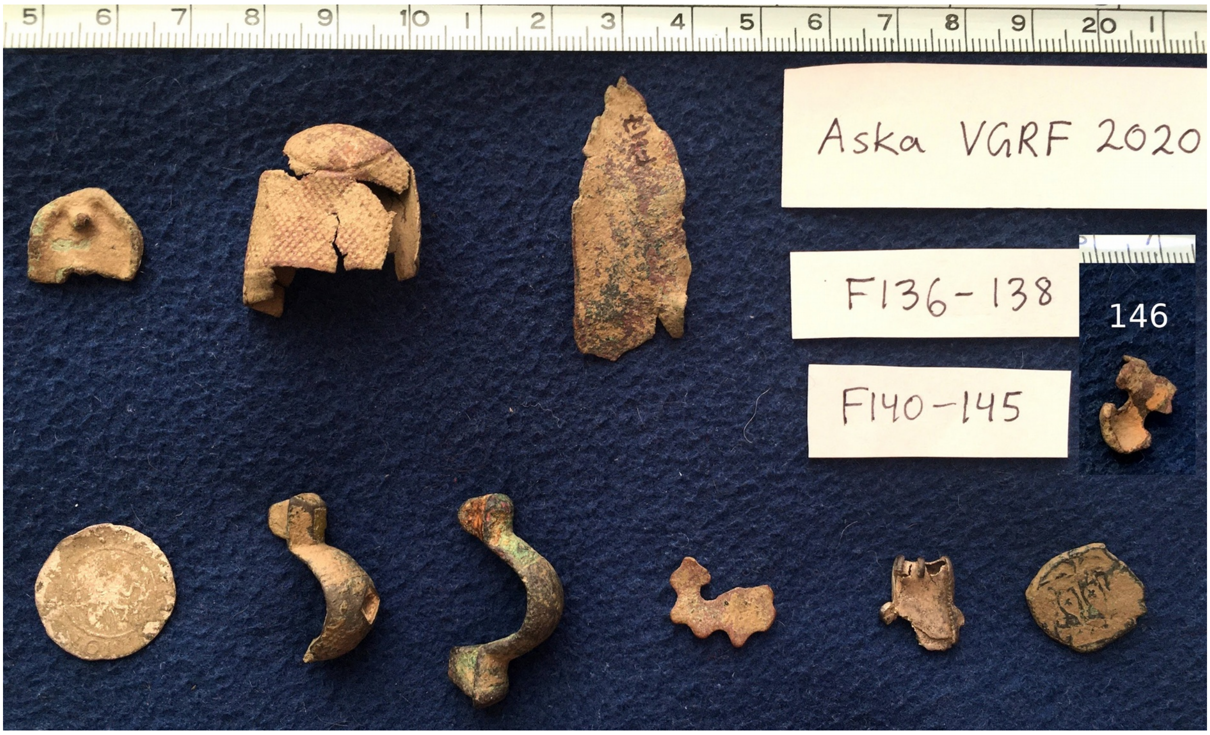
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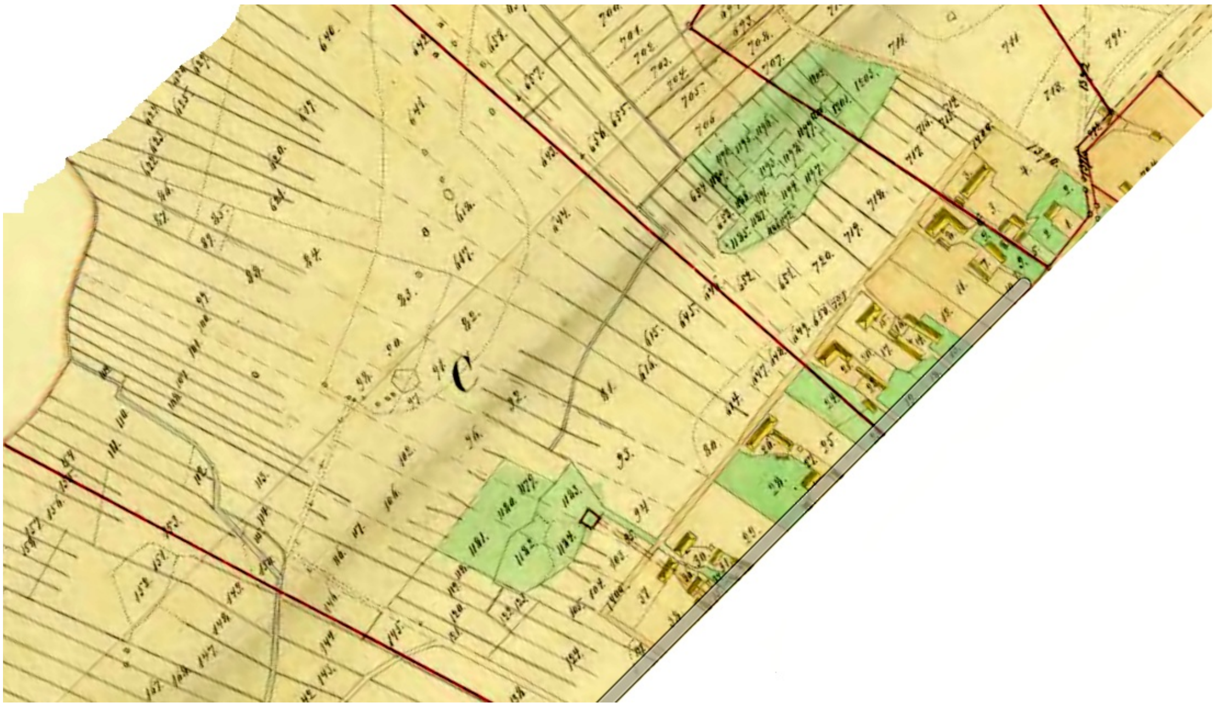
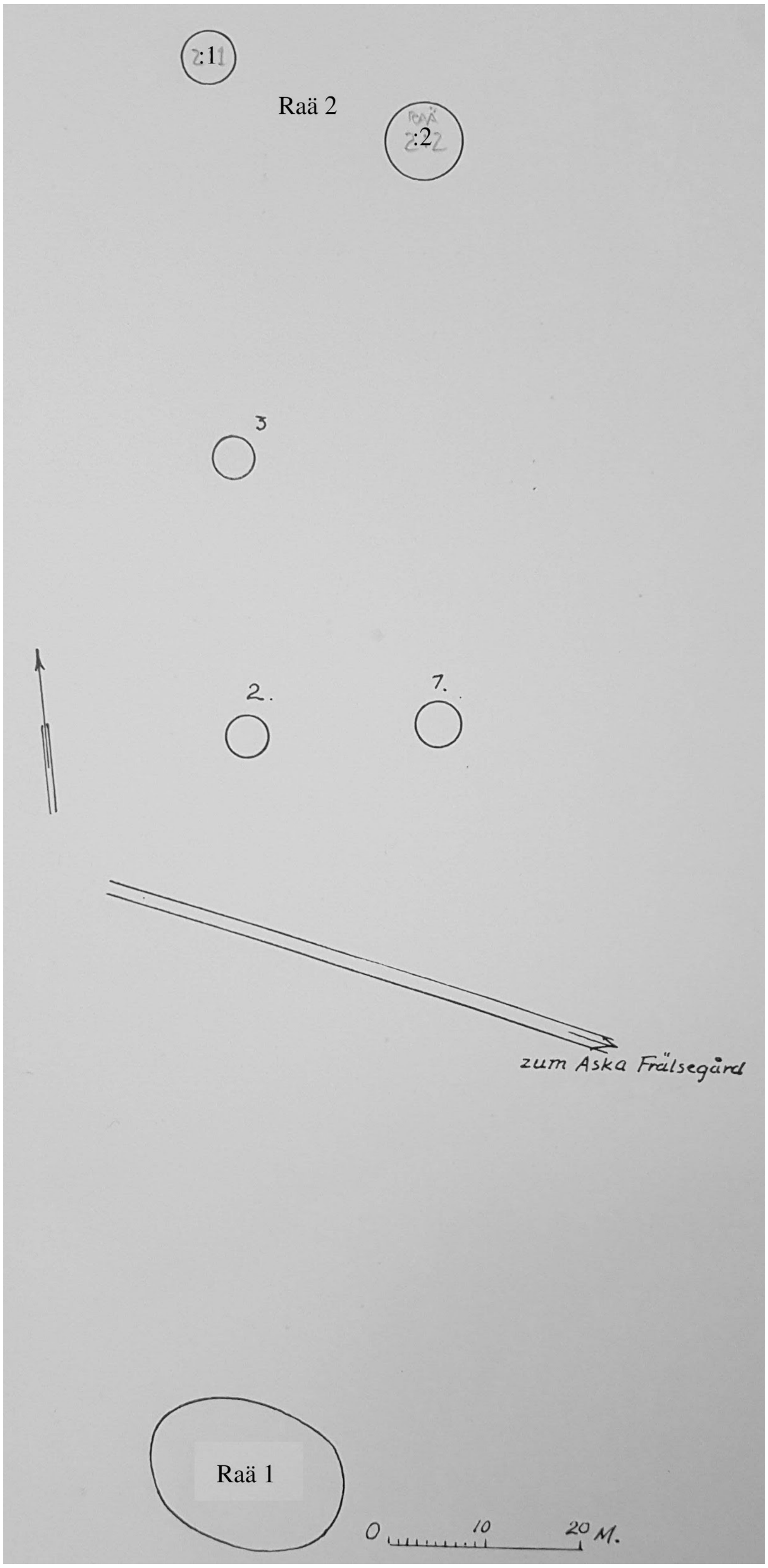
Early maps



The land west of Aska village on the 1861 Laga Skifte map. The still surviving large cairn Raä 1 is left of the big “C”. Half of the platform mound at the end of the village street is visible top right.



Ture J. Arne’s plan of the site from his 1932 paper. The three cairns Raä 1, Raä 2:1 and Raä 2:2 survive. Arne excavated cairns 1, 2, 3 and nothing remains visible above ground there. The track *zum Aska frälsegård* no longer exists.

2022/2023

CONSERVATION WORK REPORT

Aska West

Find no: 101,102,103, 104,105, 106, 107, 108, 109, 110, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 140, 141, 142, 143, 144, 145, 146

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LABORATORY OF LUMINESCENCE DATING AND CONSERVATION OF ARTIFACTS; IA UŁ

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1. General information

The number of Item	**44**	
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Site	Aska West Cemetery 2020	
The author of the work program	Magdalena Majorek [PhD]	
The author of conservation	Magdalena Majorek [PhD]	
Specialist analyzes	XRF spectrometry	microscopic photo
Author of specialist analyzes	Artur Ginter [PhD Eng.]	Magdalena Majorek [PhD]
Principal	Martin Rundkvist [assoc. res. prof.]	
The Contractor	**University of Lodz** **Institute of Archaeology** **Laboratory of Luminescence Dating and Conservation of Artifacts** ul. Narutowicza 65 90-131 Lodz	
Place where documentation is stored	Martin Rundkvist	University of Lodz Institute of Archaeology Laboratory of Luminescence Dating and Conservation of Artifacts; ul. Narutowicza 65; 90-131 Lodz

2. State of preservation

The artifact was handed over to the Laboratory of Luminescence Dating and Conservation of Artifacts for conservation works. No previous conservation work had been carried out on these items before.

2.1. Non-ferrous metal alloys (Cu alloys)

Inw. no. 101,102, 105, 106, 107, 108, 109, 110, 112, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 141, 142, 143, 146 - in organoleptic evaluation - good state of preservation, visible gray-brown-green surface corrosion products, by microscopic evaluation - visible gray-brown-green corrosion products, products of surface corrosion equal in thickness plus pitting corrosion occurs.

2.2. Non-ferrous metal alloys (Ag alloys)

Inw. no. 104, 113, 140, 144, 145 - in organoleptic evaluation - very good state of preservation.

2.3. Non-ferrous metal alloys (Pb alloys)

Inw. no. 103 - in organoleptic evaluation - good state of preservation.

3. Specialist analyzes

4. Microscopic analyzes using the DELTA OPTICAL microscope, Model SZ-630T (magnification: 0.8 x 10; 2.0 x 10) - inw. no: 101, 102, 103, 105, 107, 108, 109, 112, 119, 122, 123, 127, 128, 132, 135, 137 (the surface of the artefact was checked before and/or after removal of corrosion layers; the type of corrosion was checked);
5. Microscopic analyzes using the Nikon Eclipse LV 150 N microscope (50x magnification) - inw. no: 102, 105, 108, 109, 110, 113, 115, 116, 117, 126, 127, 128, 129, 130, 131, 132, 134, 135, 138, 140, 141, 142, 143, 144, 145, 146
6. Spectrometry XRF - measurements were made using POLON-IZOT XRF PI-MKON 0.1.XRF 01 spectrometer using dedicated Spc and SpcArcheo software. The device was equipped with an X-ray lamp (4W, 50kV, 132 μA) and a tungsten anode. The measurements were performed with the following lamp parameters: 25 kV and 5 μA, with 300s of accumulation time (the software mentioned normalises all results to 100s regardless of the accumulation duration). Tungsten and tantalum peaks visible on the spectra are Rayleigh scattering peaks connected with the tungsten anode used, and so they are not elements of the artefact studied. Argon is the basic component of the air present between the lamp and the artefact during the measurement. The spectrogram created as described above was processed using a Savitzky-Golay smoothing filter and background subtraction using the Peak Stripping method.

7. Conservation work program

The program of conservation works included cleaning, stabilization of corrosion processes and application of protective coatings, as well as preparing it for exhibition purposes or safe storage in constant humidity and temperature conditions. First, the photographic (micro and macroscopic) and measurement documentation of the monument was made. The next stage was cleaning the object of corrosion layers and rinsing out harmful compounds. In order to protect against corrosion, chemical agents that are corrosion inhibitors were used, the object was drained and protective layers were applied. As part of the last stage, a photographic and measurement documentation was made and a report on the conservation works was prepared.

8. Conservation process

5. 1. Procedure no. 1 - for copper metal alloys

- Rinsing in distilled water.
- Mechanical removal of corrosion layers with the use of hand brushes and brushes with very soft and soft synthetic bristles such as natural and with the use of: Micro-grinders Urawa UC 500 with the use of brushes with very soft and soft bristles made of synthetic and natural fibers, an ultrasonic cleaner and a micro sandblasting machine Abrasil B10001 at pressures up to 1 Bar and 0.8 mm diameter tip (only compressed **air** was used).
- The object, cleared of soil layers, was bathed in a 3% aqueous solution of di-sodium edetate and rinsed for 5 minutes. Bathing repeated several times.
- Bath in distilled water heated continuously to a temperature of 100 ° C.
- After cleaning, the object was subjected to an acetone bath to remove the water.
- After dehydration and evaporation of acetone, the surface was polished with a micro-grinder, using soft polishing brushes and polishing rubber without additional abrasive substances, and wiped with a cotton cloth.
- The stabilization process involved placing the artifact in a bath in 3% alcohol (high-percentage - 99.8%) benzotriazole [BTA] (corrosion inhibitor) solution. Slow and controlled process of alcohol evaporation was carried out.

Protective layer:

- 10% Paraloid B-44 acrylic resin dissolved in toluene / xylene was applied.

5. 2. Procedure no. 2 - for silver and gold metal alloys

- Rinsing in distilled water.
- Mechanical removal of corrosion layers with the use of hand brushes and brushes with very soft and soft synthetic bristles such as natural and with the use of: Micro-grinders Urawa UC 500 with the use of brushes with very soft and soft bristles made of synthetic and natural fibers, an ultrasonic cleaner and a micro sandblasting machine Abrasil B10001 at pressures up to 1 Bar and 0.8 mm diameter tip (only compressed **air** was used).
- The object, cleared of soil layers, was bathed in a 3% aqueous solution of di-sodium edetate and rinsed for 5 minutes. Bathing repeated several times. This stage was omitted in the case of artefacts with a preserved patina.
- After cleaning, the object was subjected to an acetone bath to remove the water.

- After dehydration and evaporation of acetone, the surface was polished with a micro-grinder, using soft polishing brushes and polishing rubber without additional abrasive substances, and wiped with a cotton cloth.

Protective layer:

- 10% Paraloid B-44 acrylic resin dissolved in toluene / xylene was applied.

5. 3. Procedure no. 3 - for lead/tin/zinc alloys

- Rinsing in distilled water.
- Mechanical removal of corrosion layers with the use of hand brushes and brushes with very soft and soft synthetic bristles such as natural and with the use of: Micro-grinders Urawa UC 500 with the use of brushes with very soft and soft bristles made of synthetic and natural fibers, an ultrasonic cleaner and a micro sandblasting machine Abrasil B10001 at pressures up to 1 Bar and 0.8 mm diameter tip (only compressed **air** was used).
- Cleaned of loose corrosion layers and possibly previously unremoved soil layers, the object was immersed in a bath: in a 3% solution of tri-ammonium citrate dissolved in water at 25°C in an ultrasonic cleaner for 1 to 5 minutes (the object was bathed in a minimum of three cycles with each time changing the solution to a new one).
- After cleaning, the object was subjected to an acetone bath to remove the water.
- After dehydration and evaporation of acetone, the surface was polished with a micro-grinder, using soft polishing brushes and polishing rubber without additional abrasive substances, and wiped with a cotton cloth.
- The stabilization process involved placing the artifact in a bath in 3% alcohol (high-percentage - 99.8%) benzotriazole [BTA] (corrosion inhibitor) solution. Slow and controlled process of alcohol evaporation was carried out.

Protective layer:

- 10% Paraloid B-44 acrylic resin dissolved in toluene / xylene was applied.

5. 4. Procedure no. 4 - for ferrous metal alloys

- Rinsing in distilled water (softening of soil and corrosion layers).
- Mechanical removal of soil and corosion layers with hand brushes, polishing stones and brushes with very hard and hard bristles (steel, plastic) and with the Urawa UC 500 Micro Drill using: - brushes of various hardness made of synthetic and natural fibers, - polishing rubbers - Abrasil B10001 micro sand blasting machines at pressures up to 3 Bar and a tip with a diameter of 0.8 mm (glass was used).
- Baths in an aqueous solution of citric acid (maximum 5%; 15-120 minutes).
- Rinsing in distilled water at 40°C in an ultrasonic cleaner in several 15-minute cycles with each water change.

- Cleaning the surface using brushes with metal bristles, as well as delicate wooden and plastic spatulas and a scalpel to undermine and crush corrosion layers as well as diamond drills.
- Bathing in a 3% solution of disodium edetate (EDTA) dissolved in distilled water in 5-10-minute cycles in an ultrasonic cleaner. The procedure was repeated several times, each time changing the fluid.
- Processes above were repeated many times.
- Bathing in distilled water heated continuously to 100°C.
- After cleaning, the object was bathed in acetone to remove water.
- After dehydration and evaporation of the acetone, the surface was cleaned with a metal bristle brush.

Stabilization process:

- Corrosion layers were passivated in baths in a 2 to 10% solution of tannin in alcohol.
- After evaporation of the solvent, the excess of precipitated tannin compounds and corrosion layers were removed mechanically and the surface was polished.

Protective layer:

10% Paraloid B72 acrylic resin dissolved in toluene / xylene was applied.

9. Recommendations for preventive care

The artifact should be stored in constant conditions:

- temperature (18-23 ° C),
- humidity (absolute maximum humidity should not exceed 40%).

The object should be protected against dust and weather conditions, including UV rays or water. Cleaning should be carried out with particular care, using linen or cotton material.

The item should be protected against mechanical damage, stored individually with the use of string bags. For storage, it is best to use acid-free cardboard boxes and additional materials that insulate from other items or packaging materials by using, for example, bubble wrap.

Do not touch objects directly with your hands. It is recommended to remove items with clean rubber (latex / nitrile / vinyl) or cotton gloves, with extreme caution. All activities should be performed in a clean space with constant temperature and humidity conditions.

Do not leave unprotected objects in the air.

Transport only in properly prepared and secured containers, in which the archaeological object should be placed in a stable manner, without the possibility of moving inside the container.

10. Item description and photographic documentation

7.1. Tortoise brooch, find no. 101

Item	**Tortoise brooch**
Inv . No.	101
Site	Aska West Cemetery 2020
Dimensions [cm]	length 10.96, width 5.80, plate thickness 0.14
Weight [g]	50, 976
Raw material	Cu alloy
Procedure	no. 1

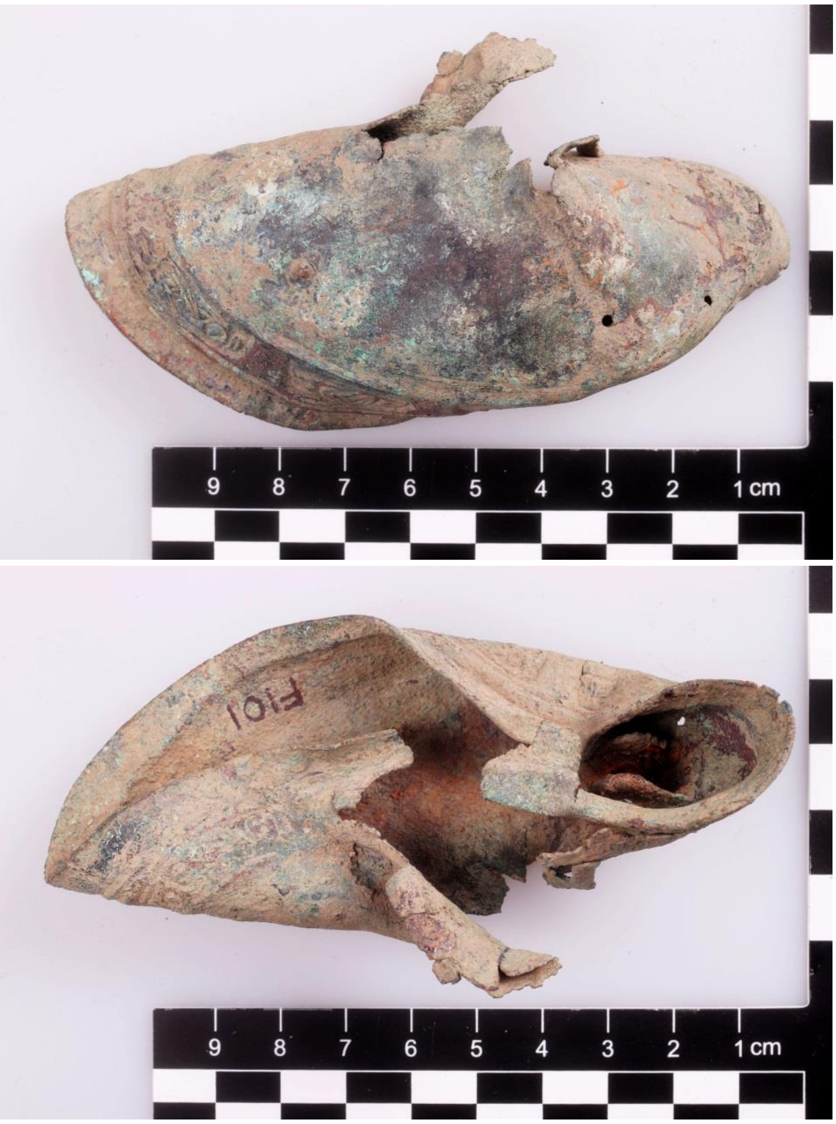


Figure 1. Tortoise brooch, find no. 101 - before conservation

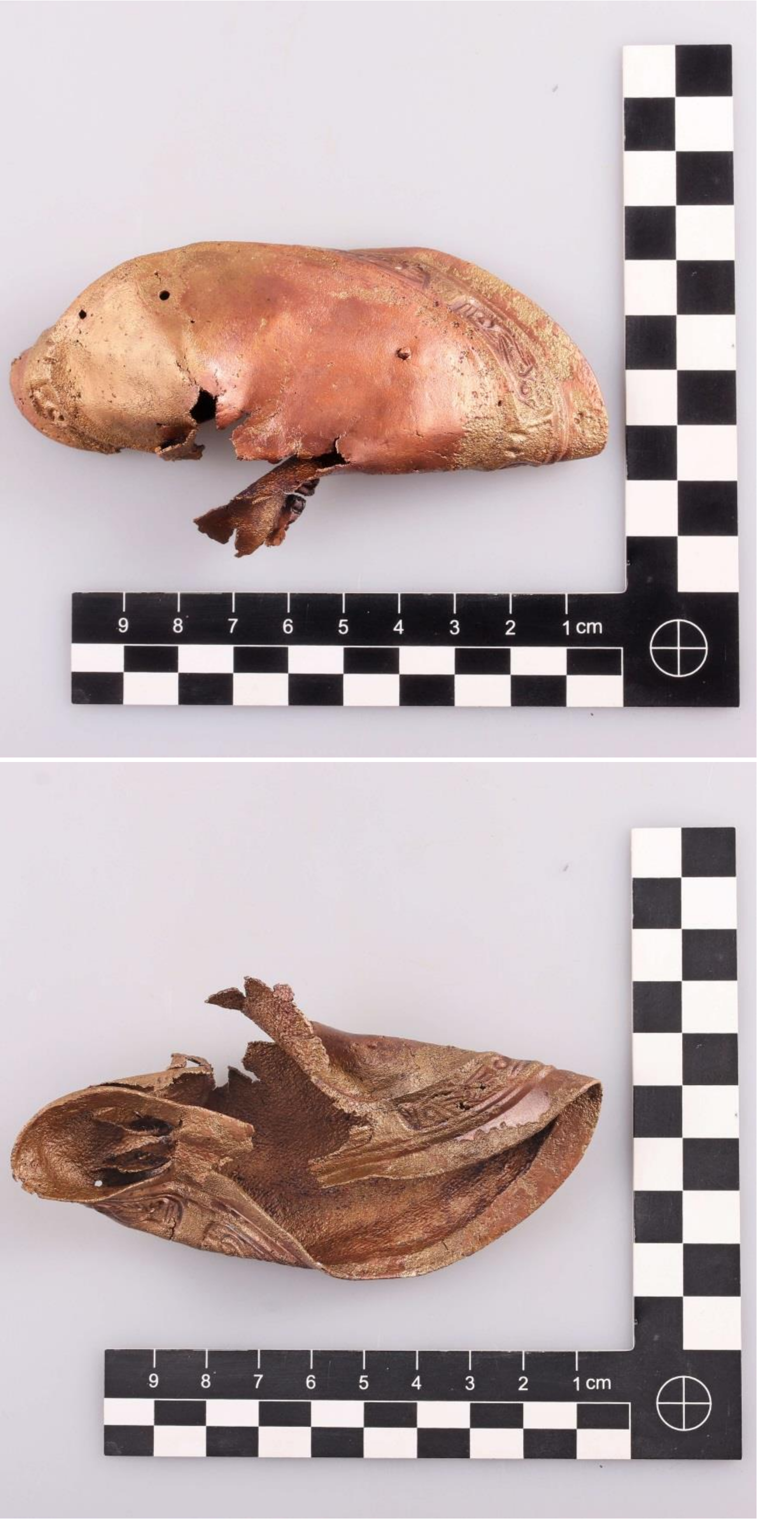


Figure 2. Tortoise brooch, find no. 101 - after conservation

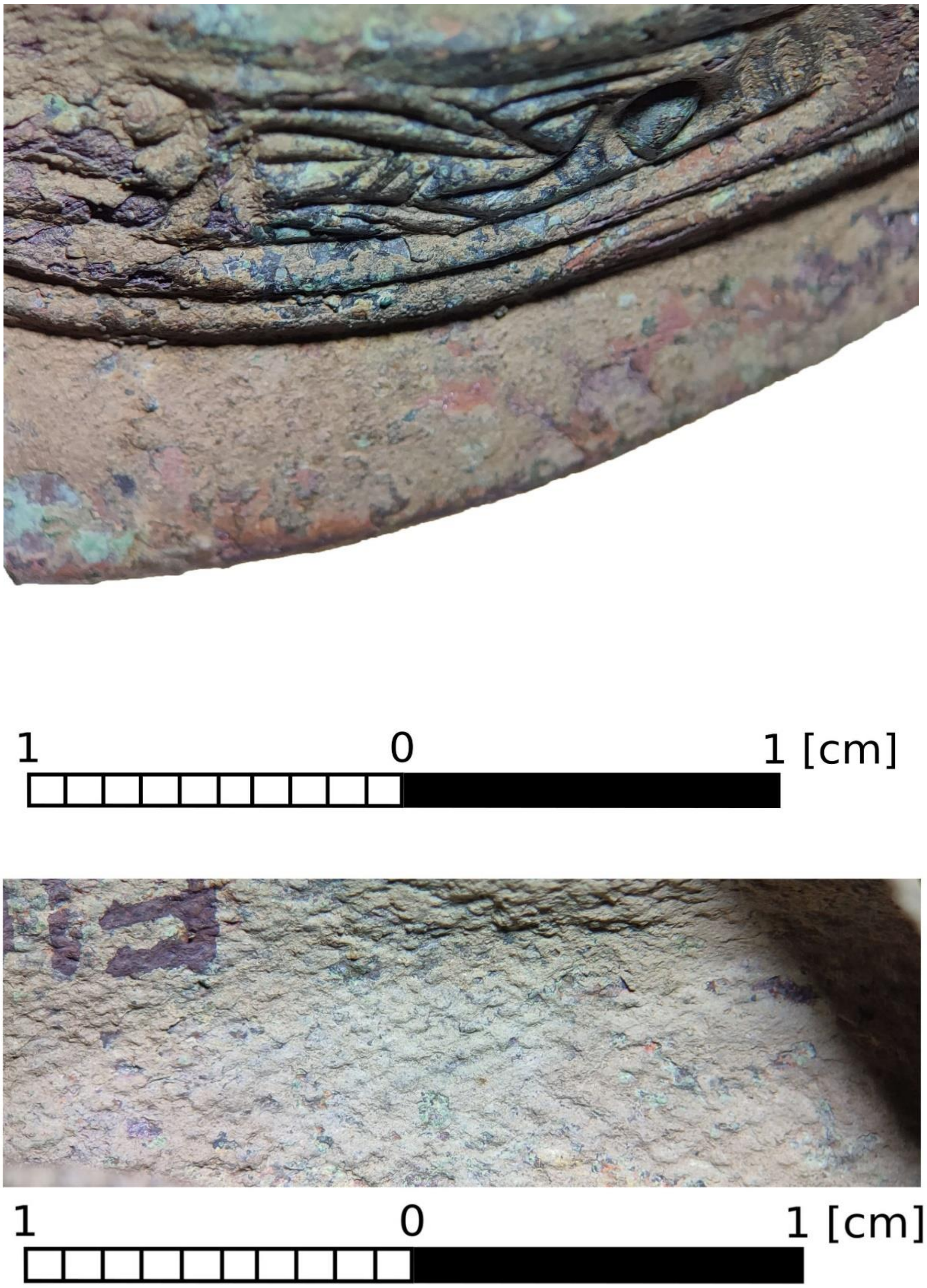


Figure 3. Tortoise brooch, find no. 101 - before conservation - close up

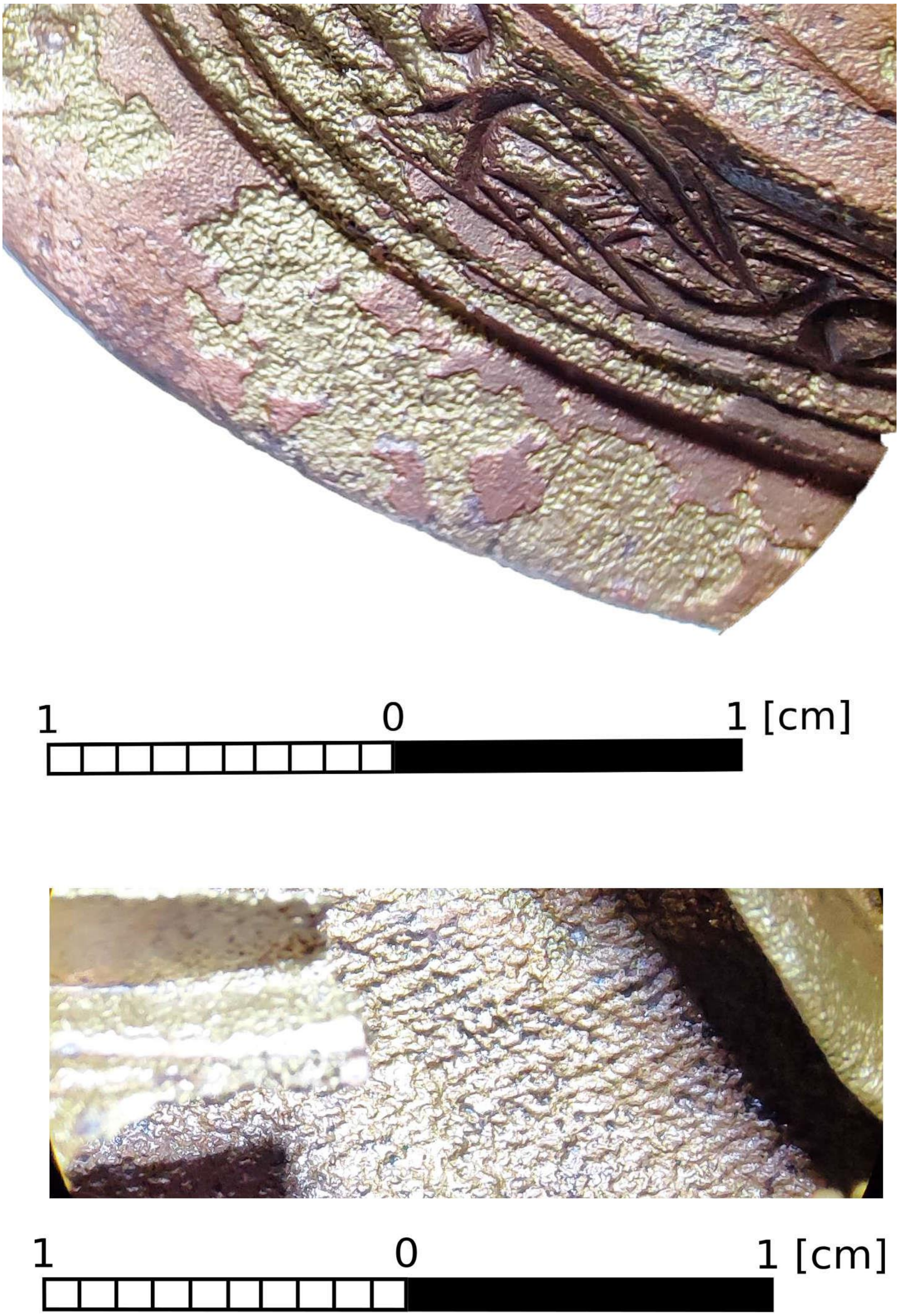
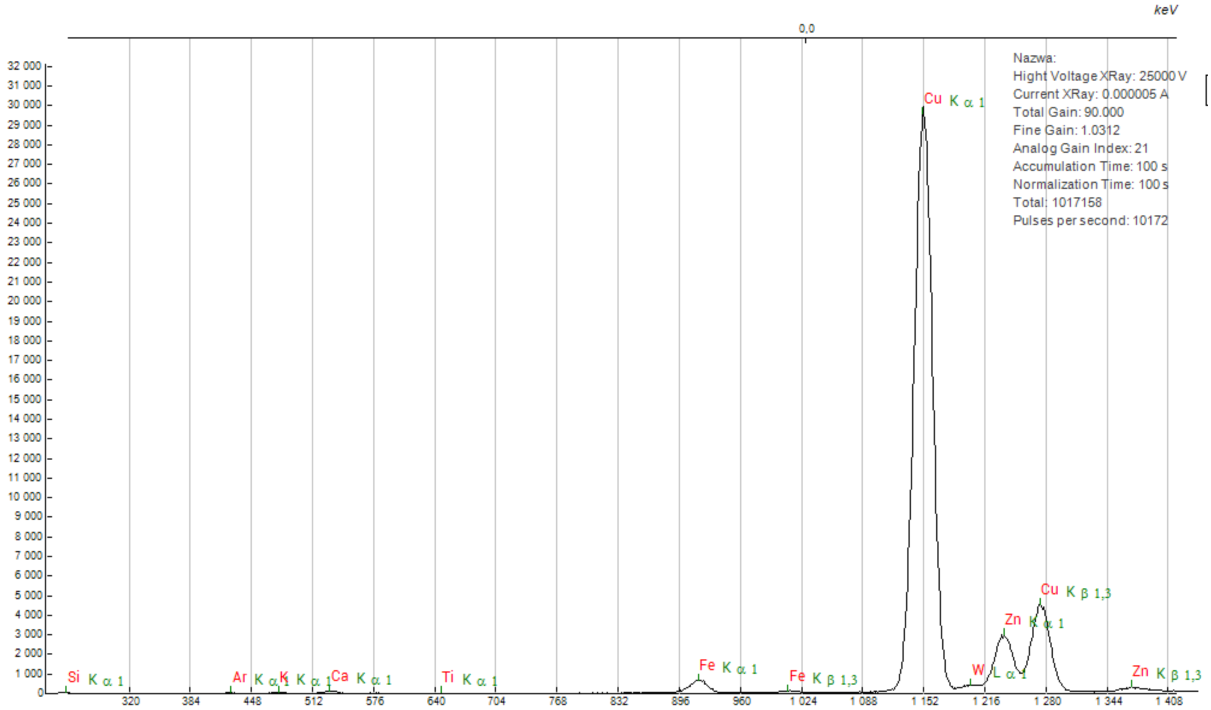


Figure 4. Tortoise brooch, find no. 101 - after conservation - close up



Nazwa:
Hight Voltage XRay: 25000 V
Current XRay: 0.000005 A
Total Gain: 90.000
Fine Gain: 1.0312
Analog Gain Index: 21
Accumulation Time: 100 s
Normalization Time: 100 s
Total: 1017158
Pulses per second: 10172

Figure 5. Tortoise brooch, find no. 101 - spectrogram

7.2. Tortoise brooch, find no. 102

Item	Tortoise brooch
Inv . No.	102
Site	Aska West Cemetery 2020
Dimensions [cm]	length 8.96, width 5.80, maximum sheet thickness 1.05
Weight [g]	36,377
Raw material	Cu alloy
Procedure	no. 1

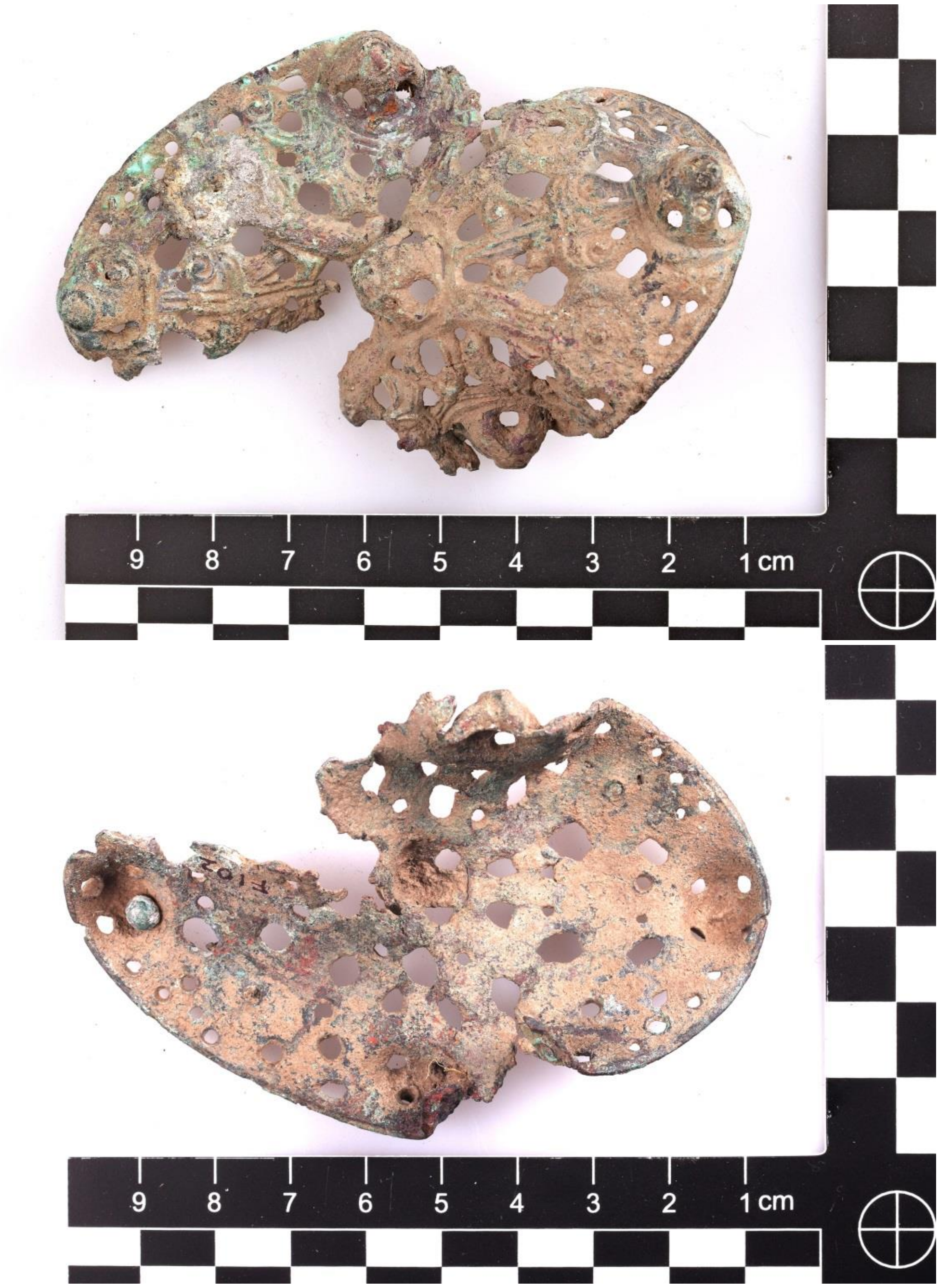


Figure 6. Tortoise brooch, find no. 102 - before conservation

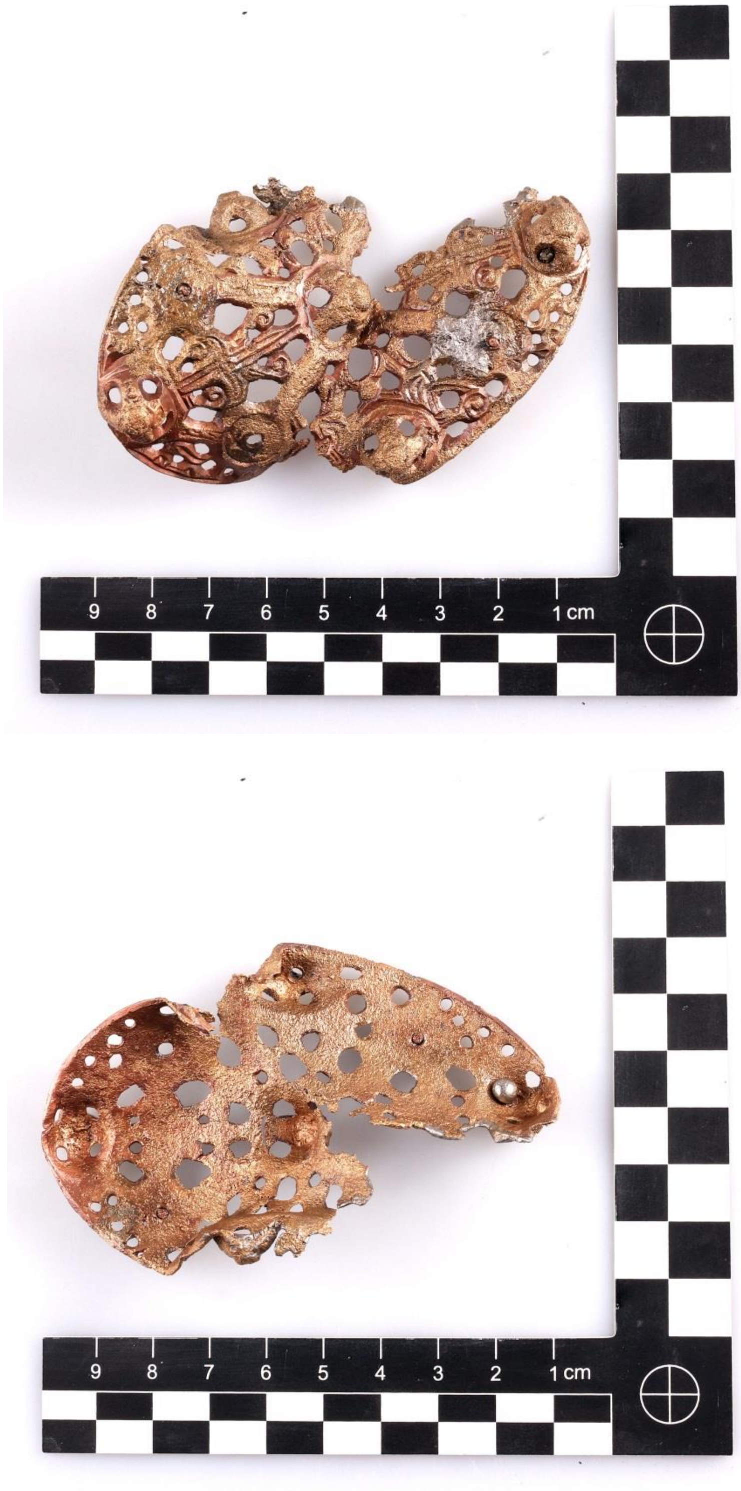


Figure 7. Tortoise brooch, find no. 102 - after conservation

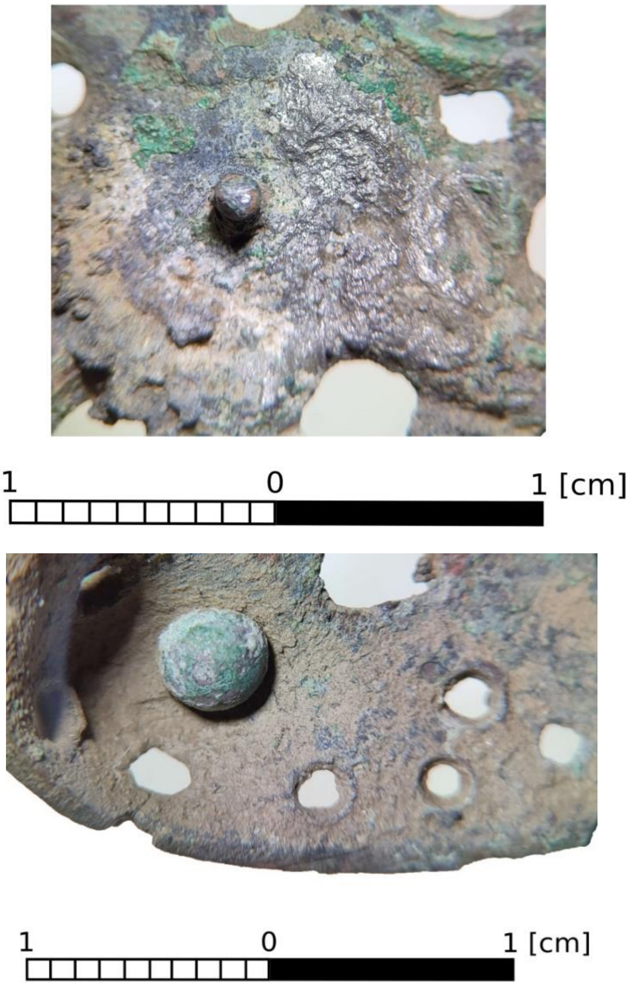


Figure 8. Tortoise brooch, find no. 102 - before conservation - close up

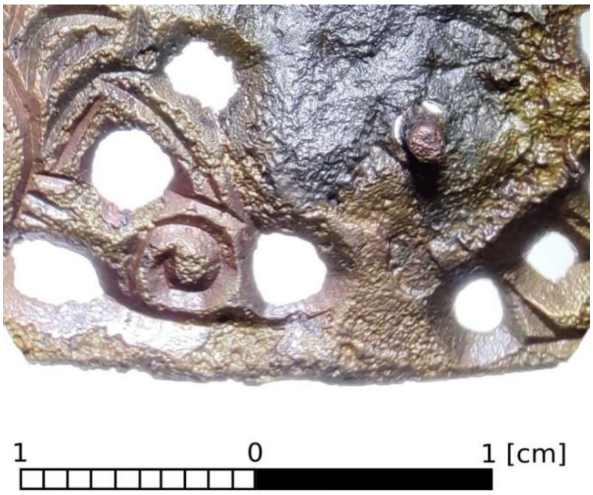


Figure 9. Tortoise brooch, find no. 102 - after conservation - close up

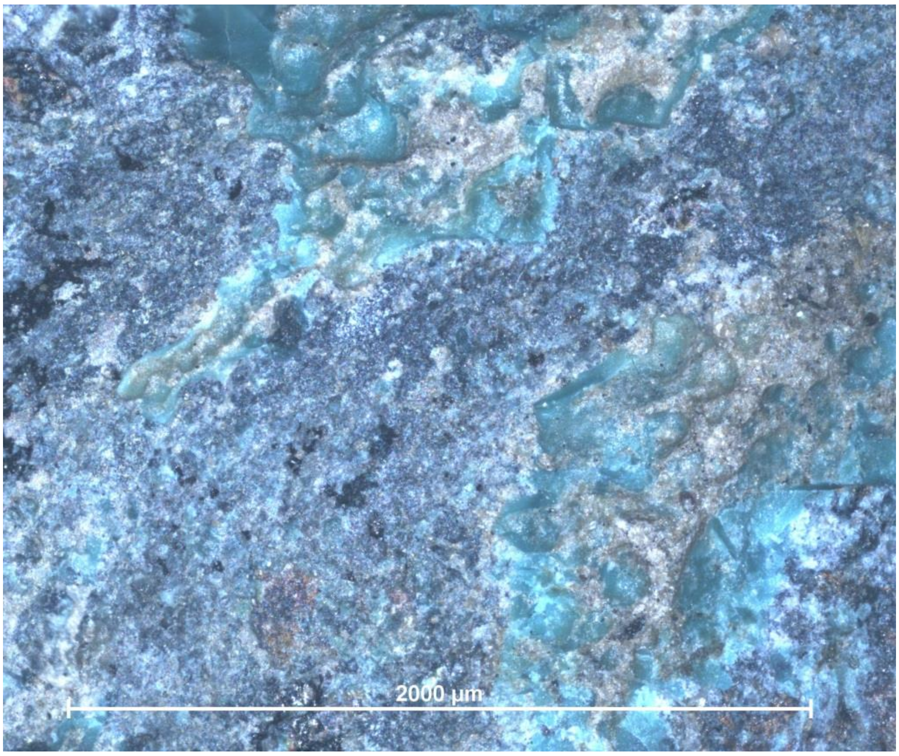


Figure 10. Tortoise brooch, find no. 102 - before conservation - image from the Nikon Eclipse LV 150 N microscope

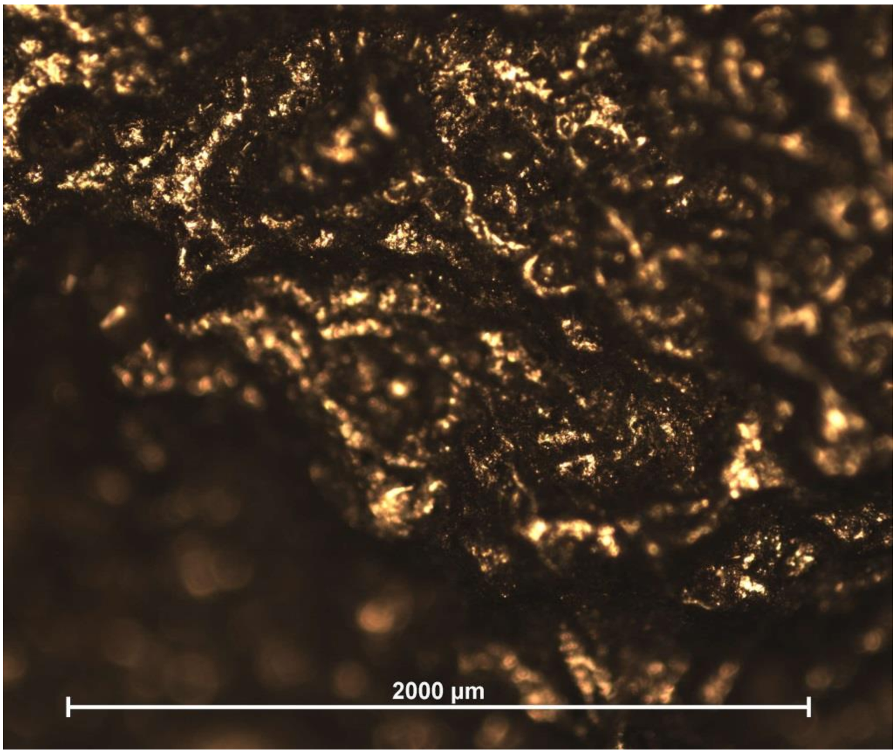


Figure 11. Tortoise brooch, find no. 102 - after conservation - image from the Nikon Eclipse LV 150 N microscope

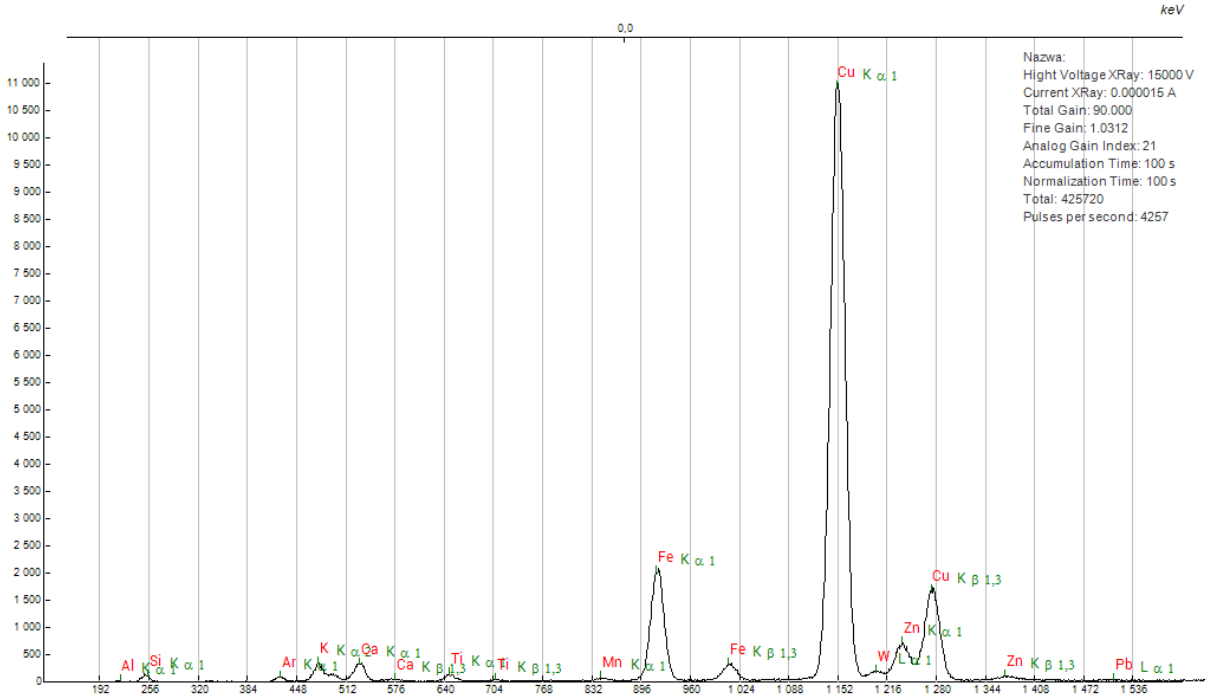


Figure 12. Tortoise brooch, find no. 102 - spectrogram

7.3. Spindle whorl, find no. 103

Item	**Spindle whorl**
Inv . No.	103
Site	Aska West Cemetery 2020
Dimensions [cm]	outside diameter: 3.1; inside diameter: 1.53; height 1.3
Weight [g]	54,744
Raw material	Pb alloy
Procedure	no. 3

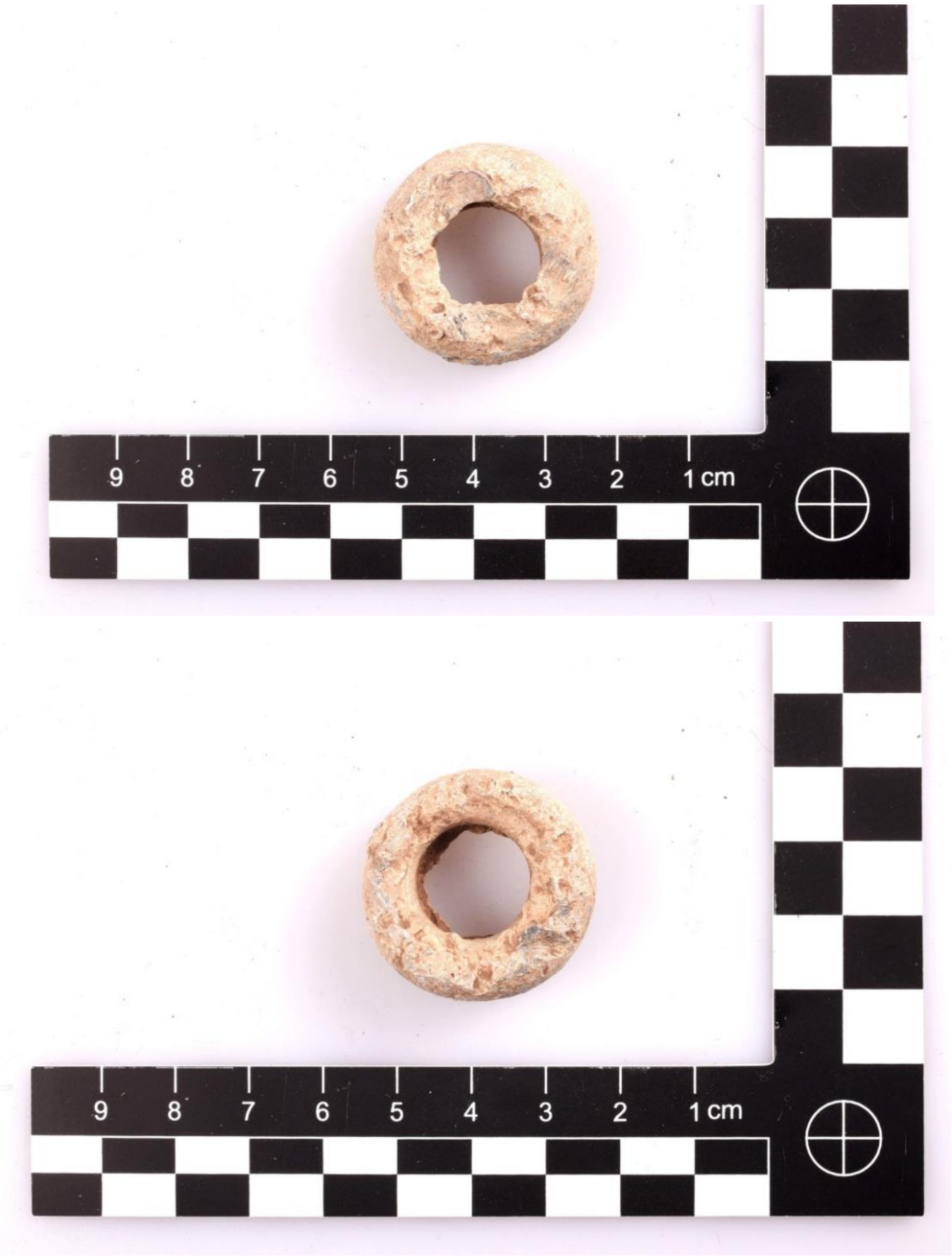


Figure 13. Spindle whorl, find no. 103 - before conservation

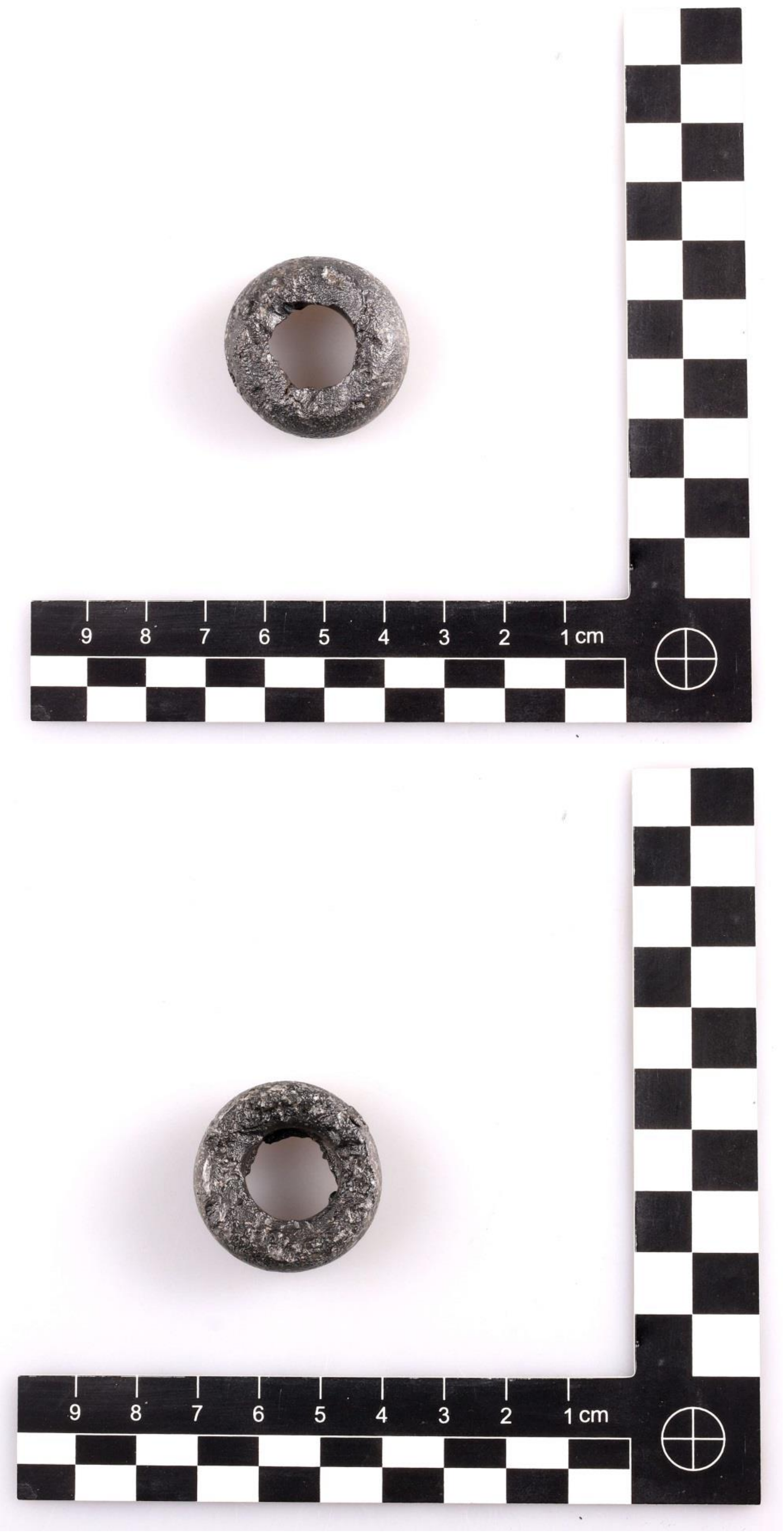


Figure 14. Spindle whorl, find no. 103 - after conservation

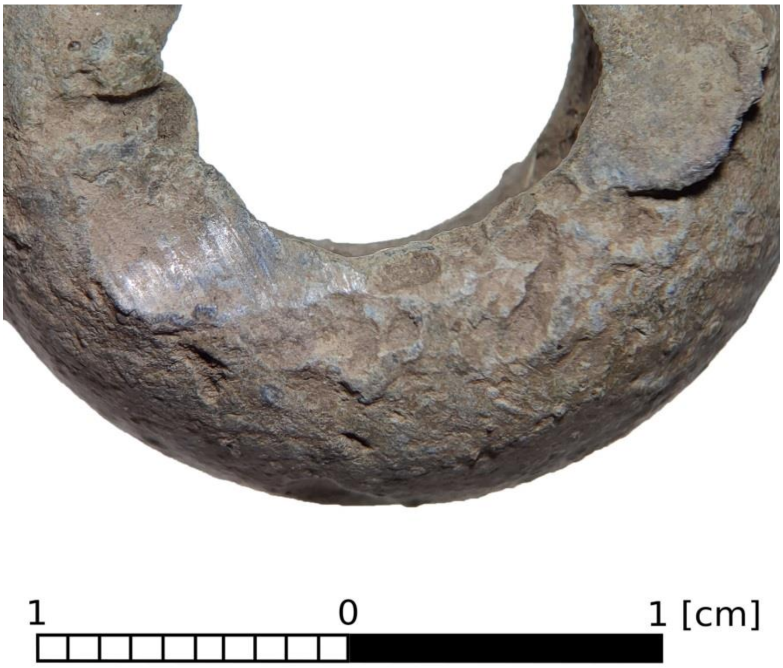


Figure 15. Spindle whorl, find no. 103 - before conservation - close up

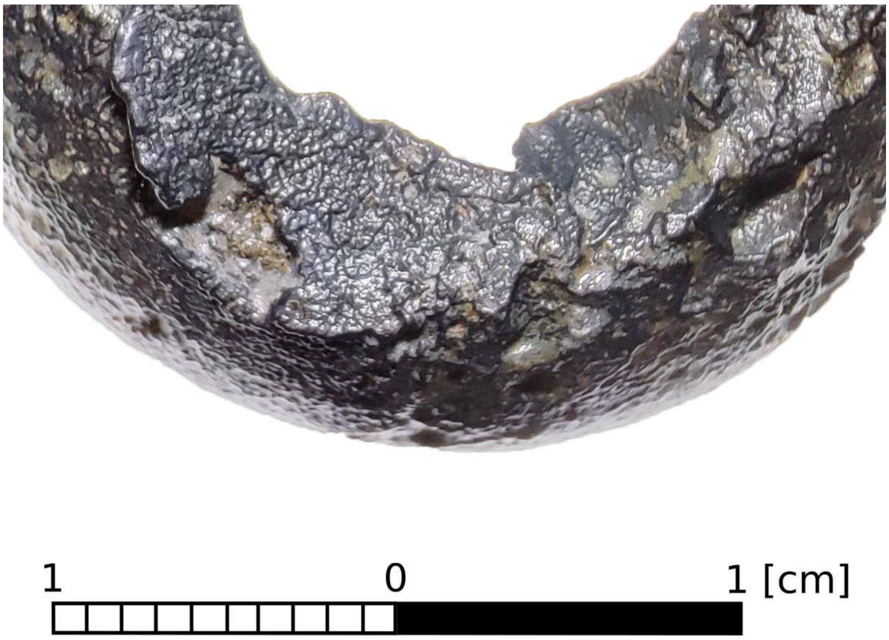


Figure 16. Spindle whorl, find no. 103 - after conservation - close up

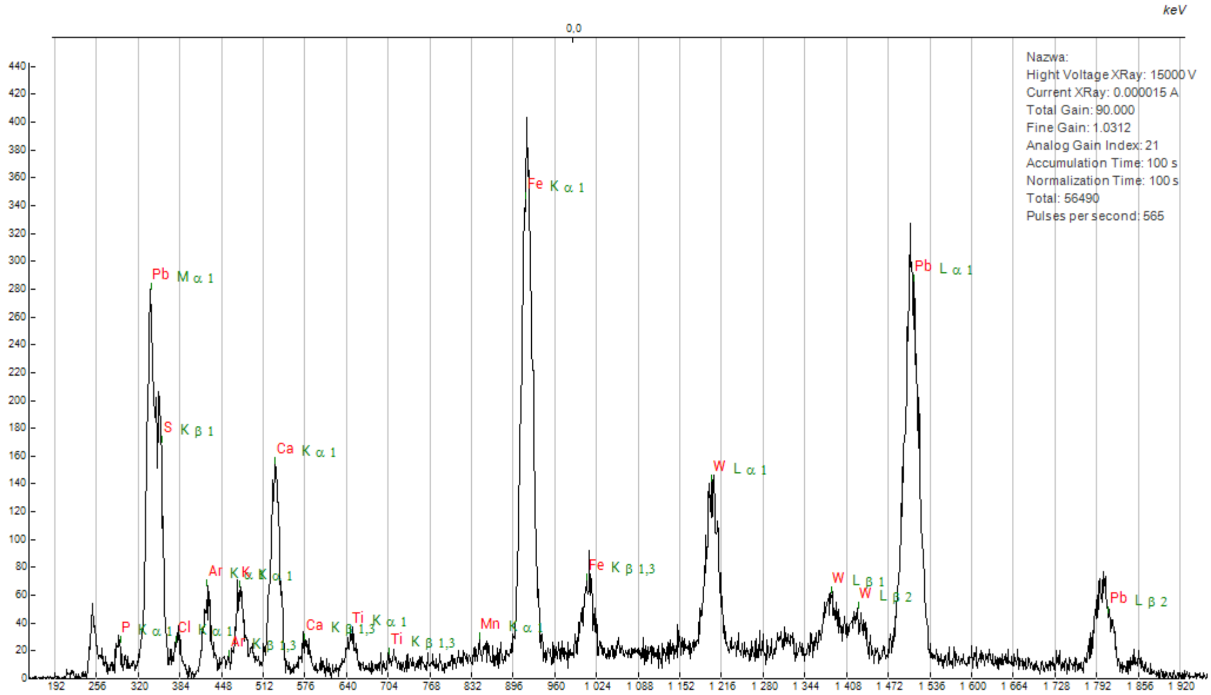


Figure 17. Spindle whorl, find no. 103 - spectrogram

7.4. Bar, find no. 104

Item	Bar
Inv . No.	104
Site	Aska West Cemetery 2020
Dimensions [cm]	length 4.54; width 1.27; thickness 0.68
Weight [g]	21,9
Raw material	Cu alloy
Procedure	no. 1

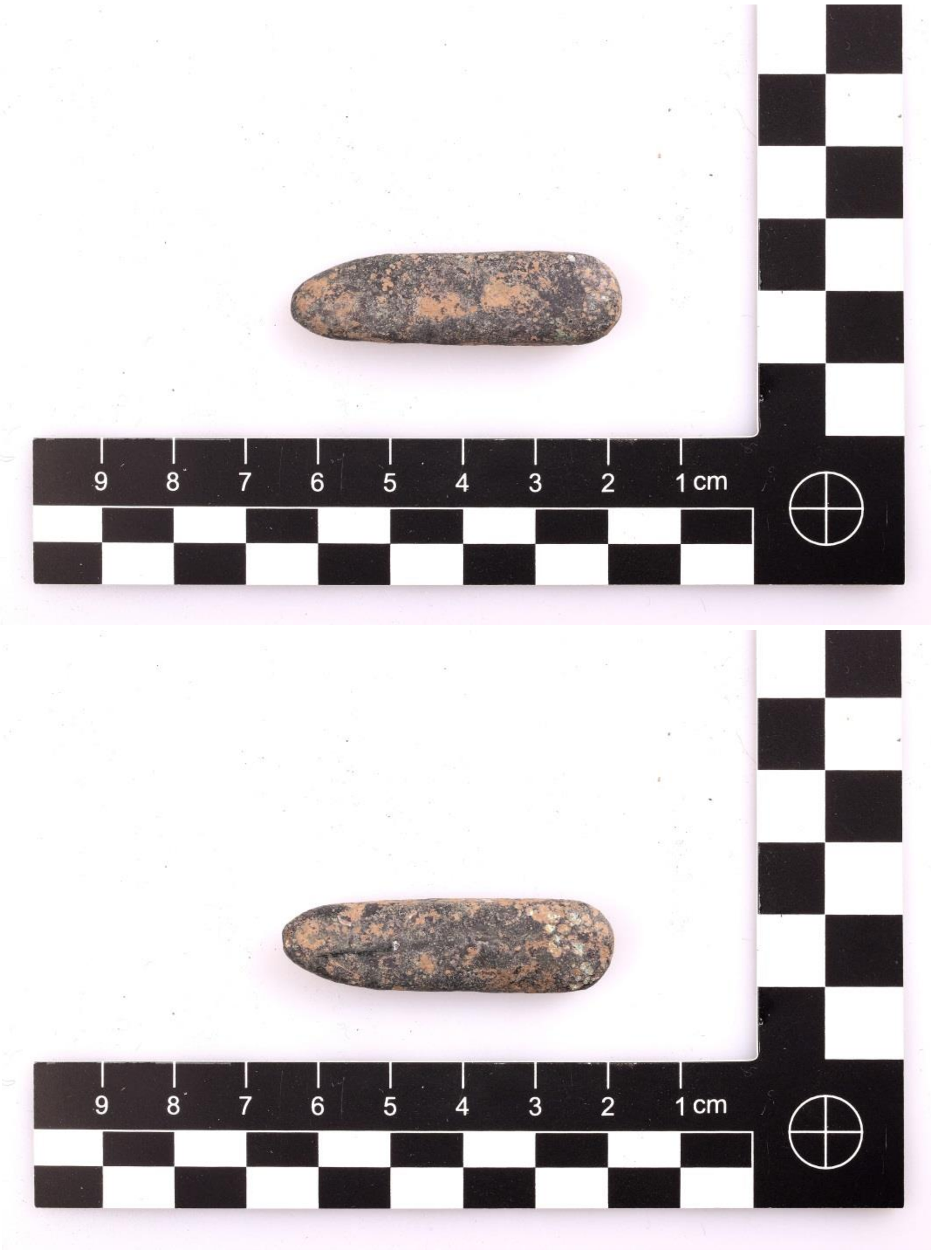


Figure 18. Bar, find no. 104 - before conservation

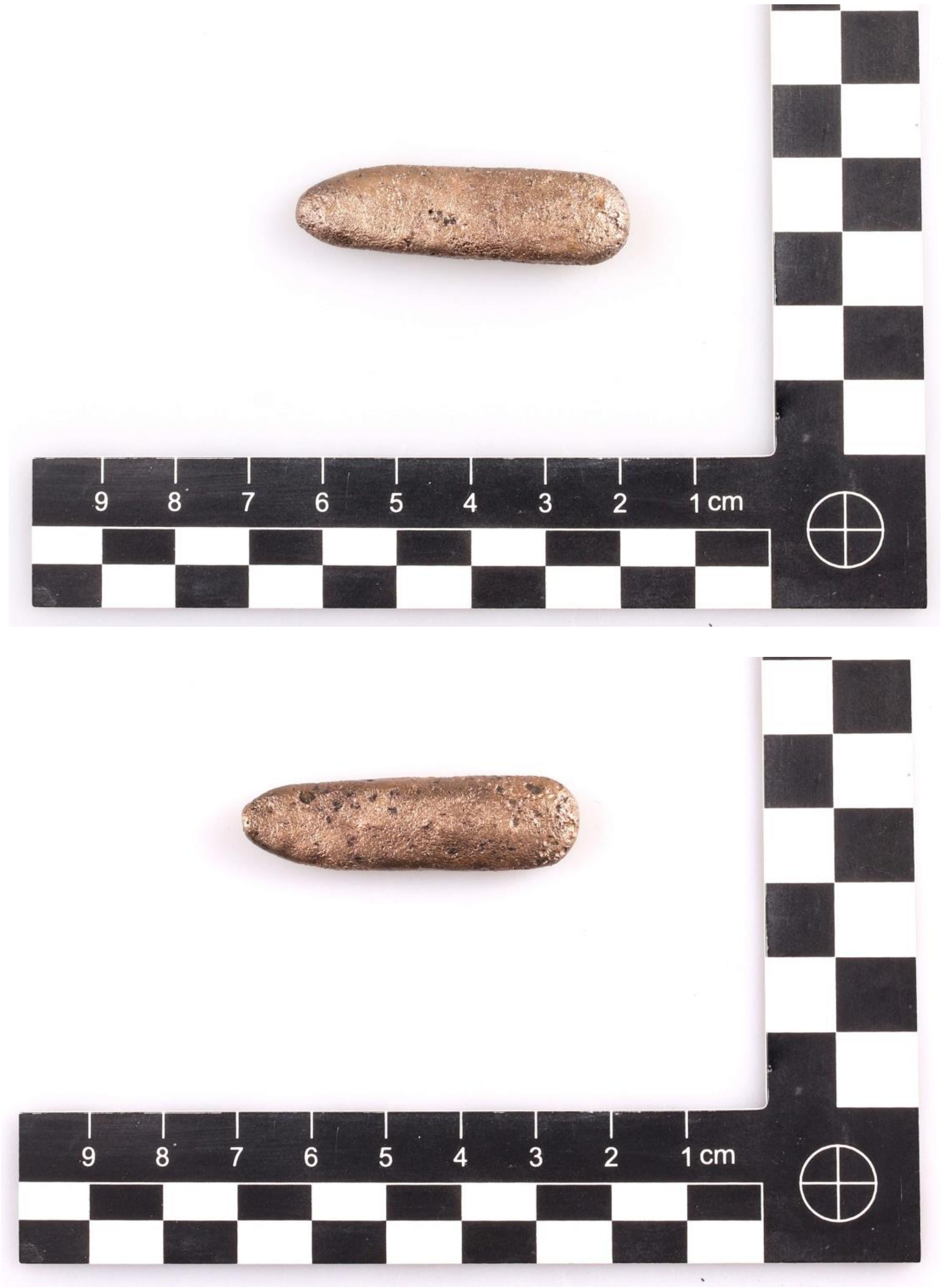


Figure 19. Bar, find no. 104 - after conservation

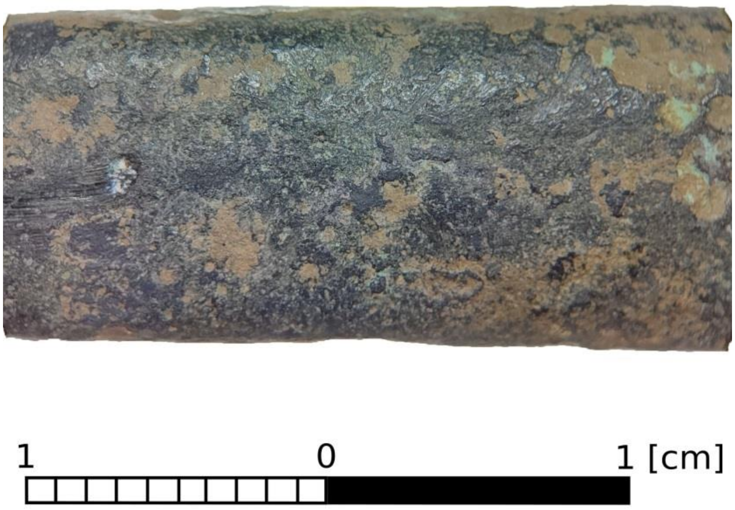


Figure 20. Bar, find no. 104 - before conservation - close up

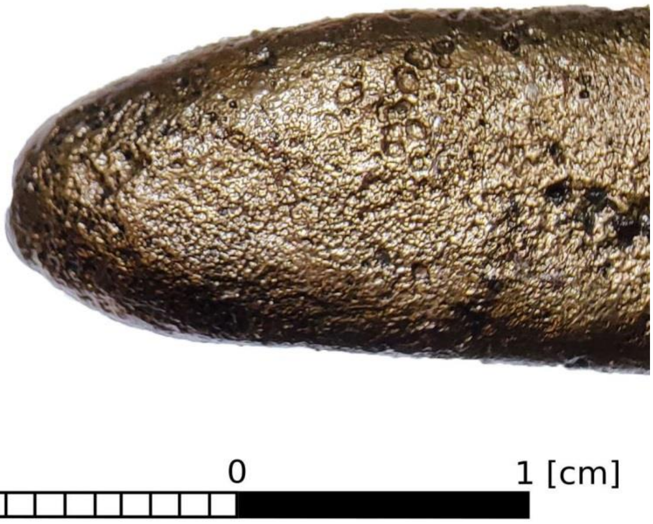


Figure 21. Bar, find no. 104 - after conservation - close up

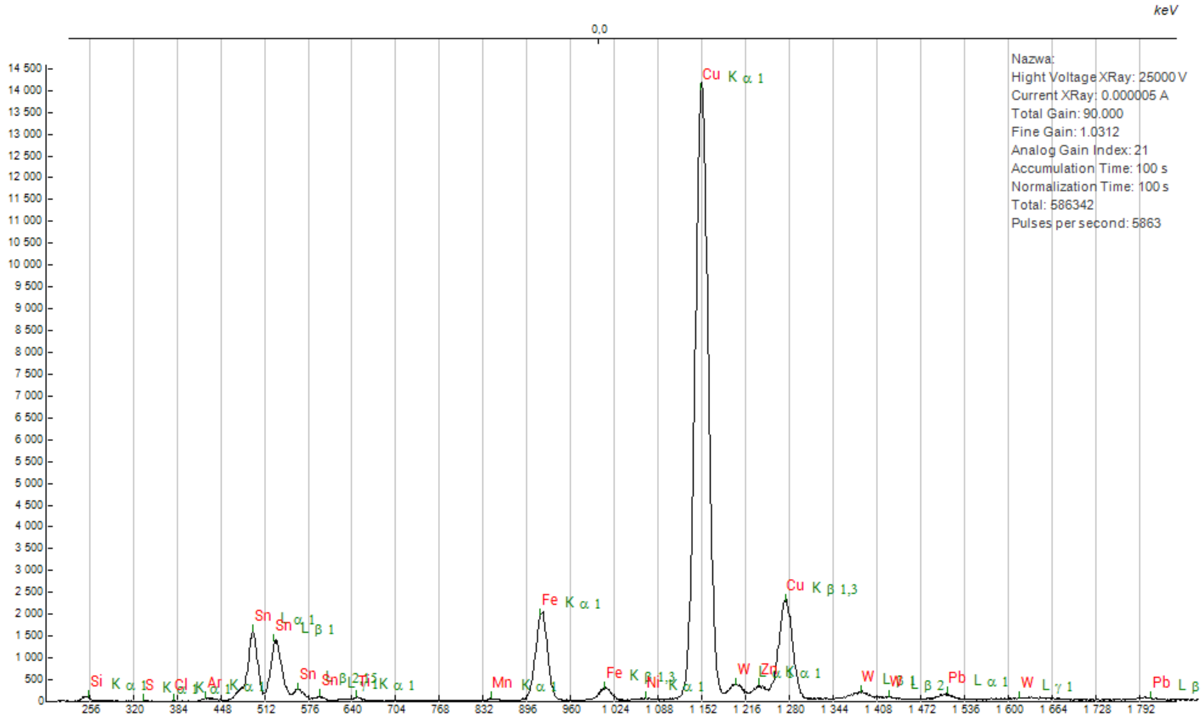


Figure 22. Bar, find no. 104 - spectrogram

7.5. Eagle brooch, find no. 105

Item	**Eagle brooch**
Inv . No.	105
Site	Aska West Cemetery 2020
Dimensions [cm]	length 3.27; width 2.30; maximum thickness 0.67
Weight [g]	4,536
Raw material	Cu alloy
Procedure	no. 1

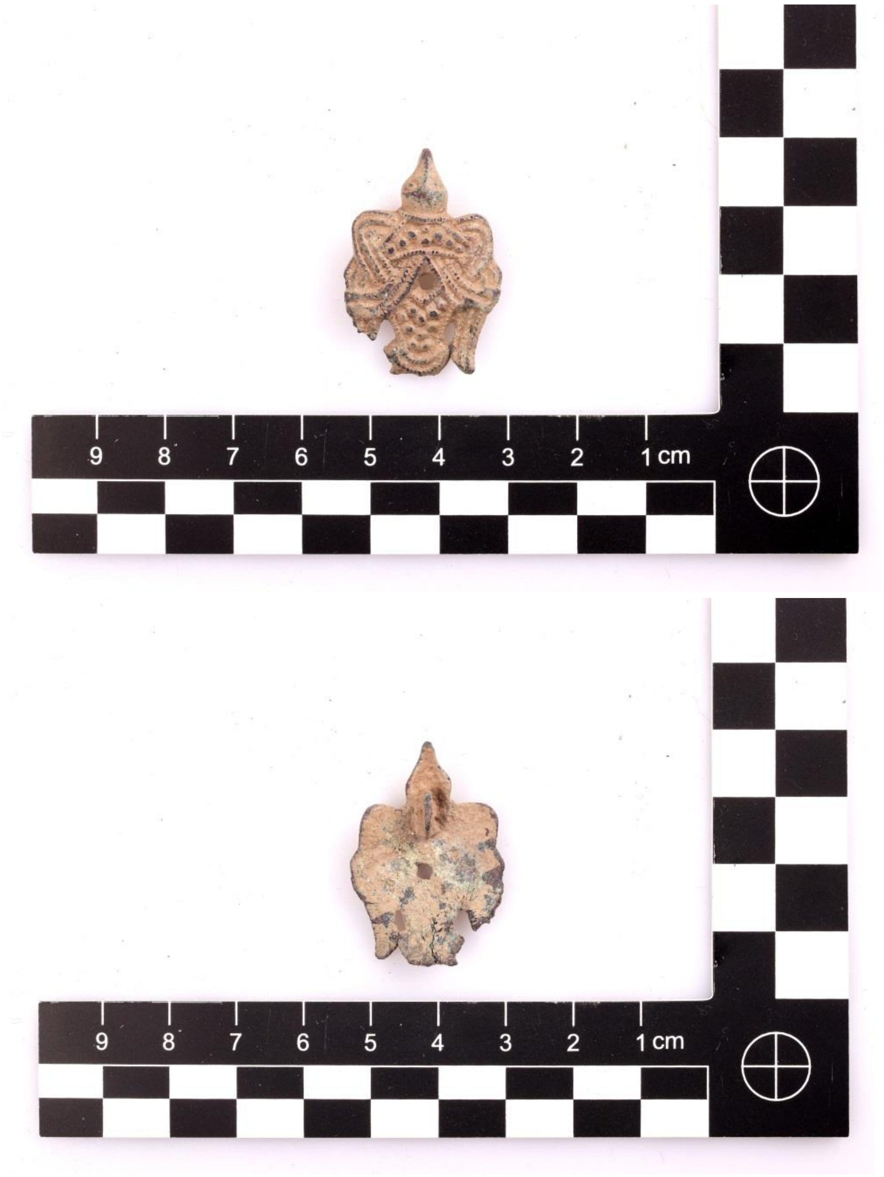


Figure 23. Bar, find no. 104 - before conservation

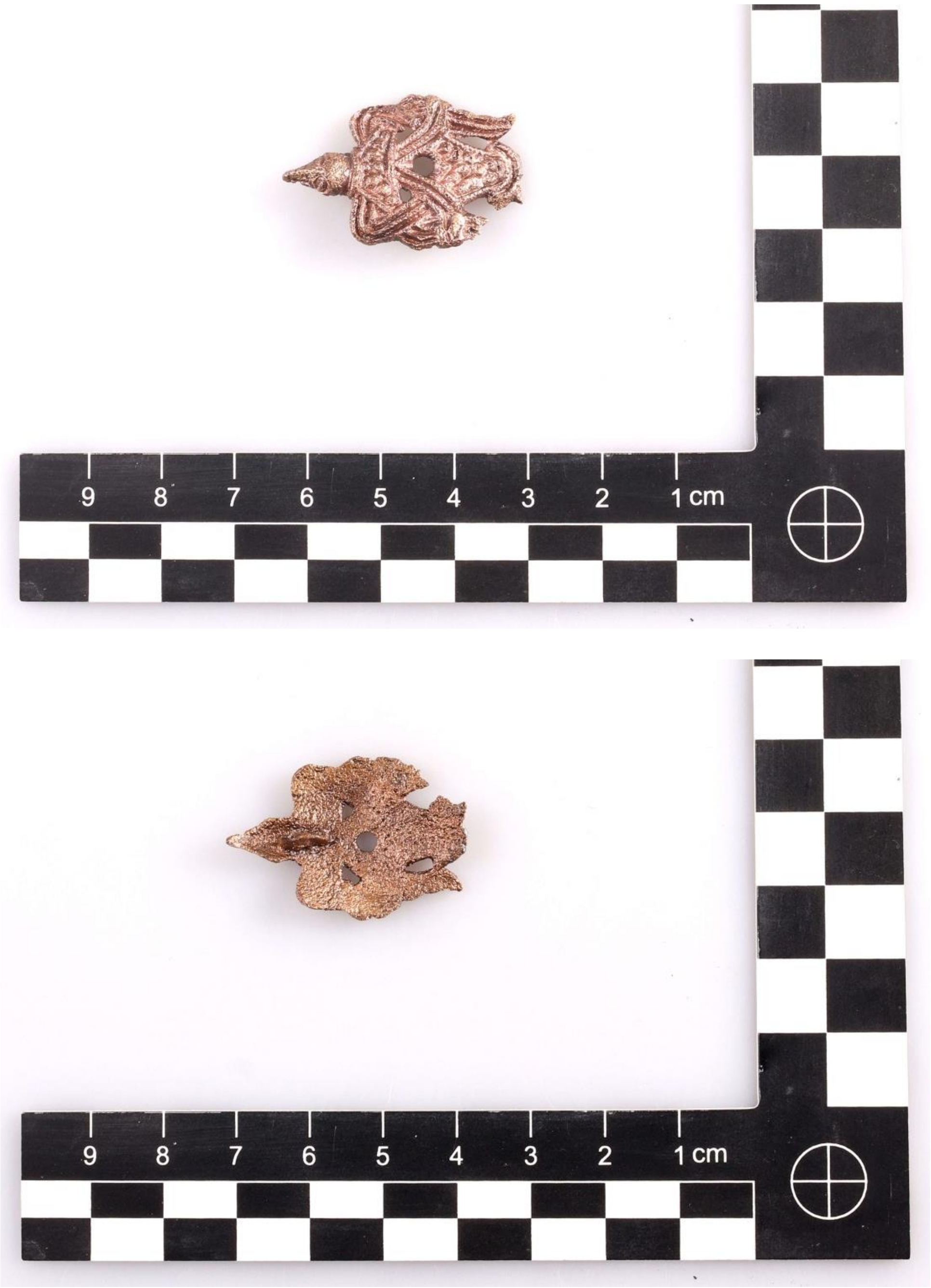


Figure 24. Bar, find no. 104 - after conservation

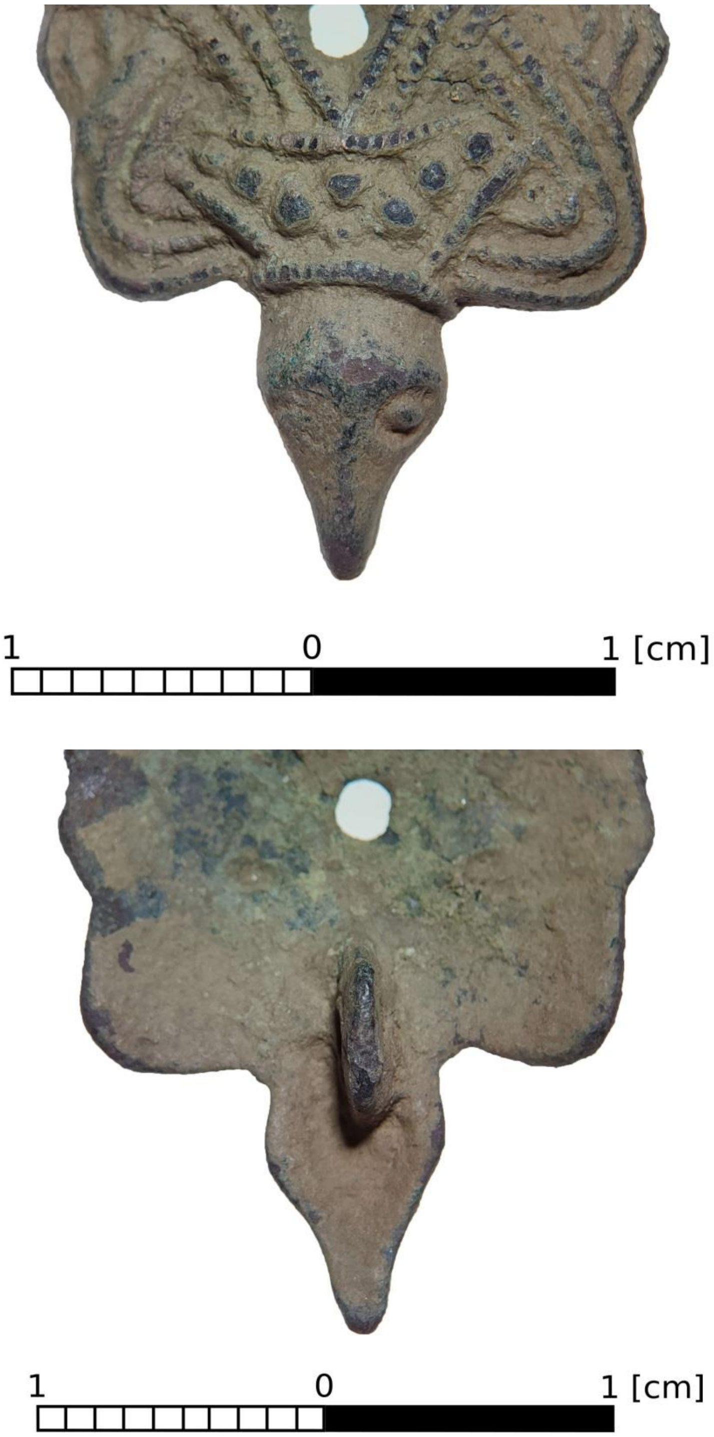


Figure 25. Bar, find no. 104 - before conservation - close up

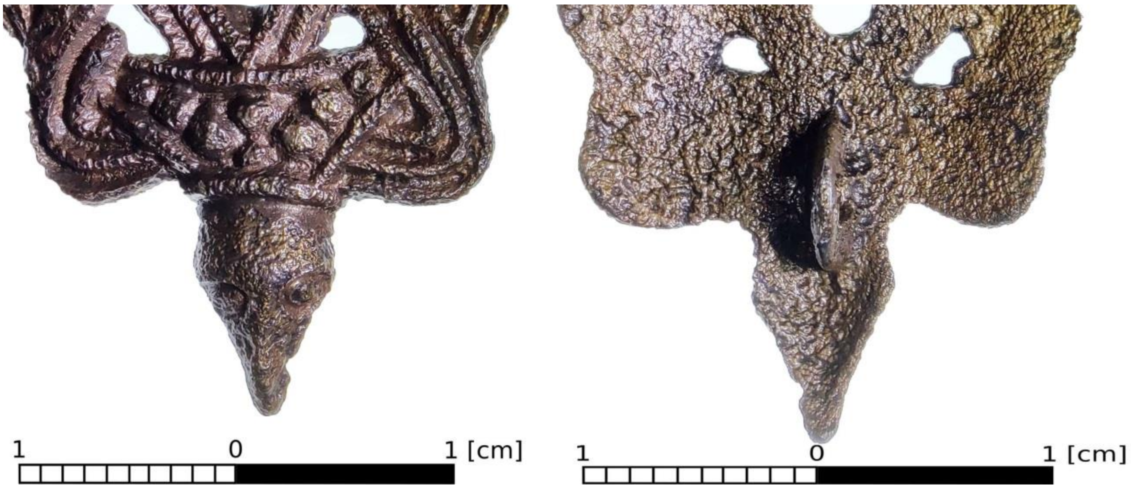


Figure 26. Bar, find no. 104 - after conservation - close up

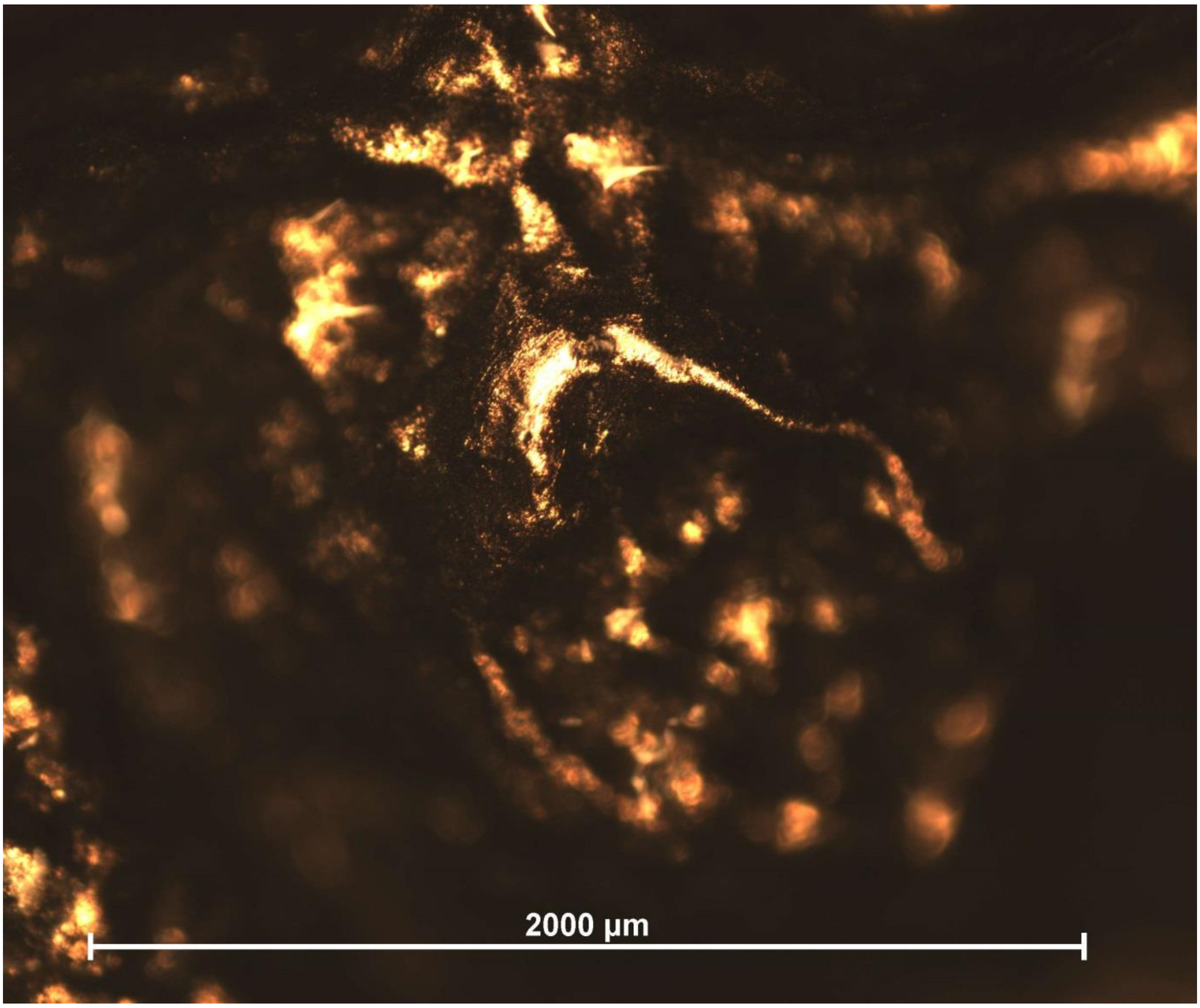


Figure 27. Bar, find no. 104 - after conservation - image from the Nikon Eclipse LV 150 N microscope

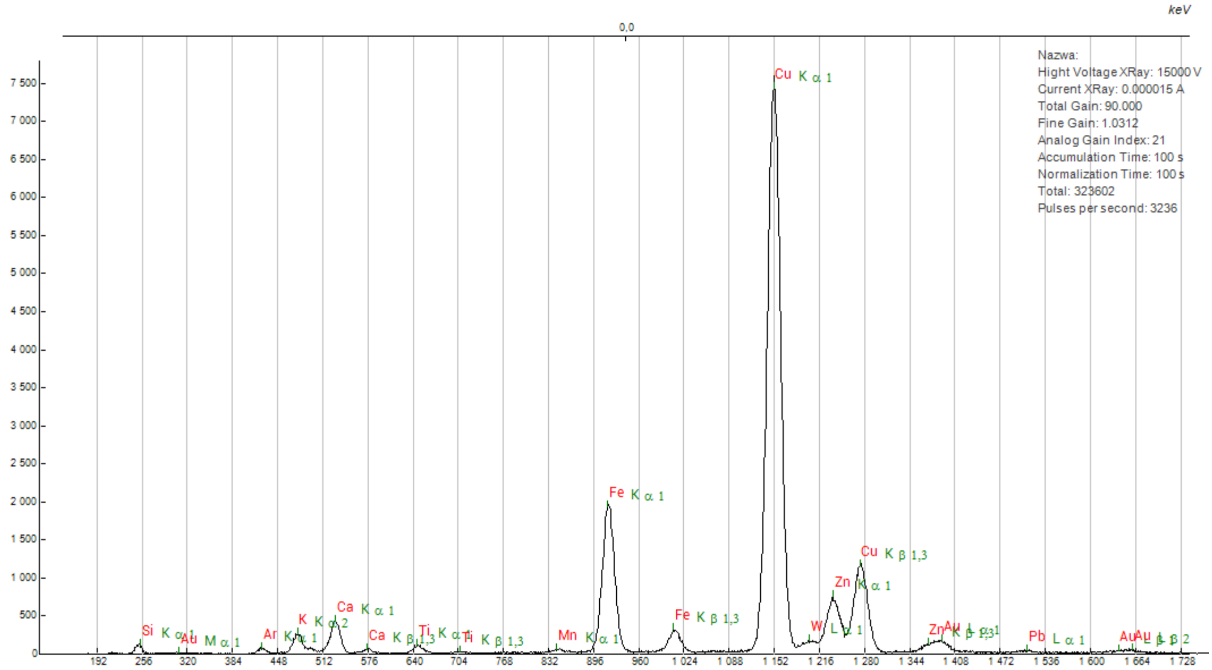

Nazwa:
Hight Voltage XRay: 15000 V
Current XRay: 0.000015 A
Total Gain: 90.000
Fine Gain: 1.0312
Analog Gain Index: 21
Accumulation Time: 100 s
Normalization Time: 100 s
Total: 323602
Pulses per second: 3236

Figure 28. Bar, find no. 104 - cpectrogram

7.6. Strap end, find no. 106

Item	**Strap end**
Inv . No.	106
Site	Aska West Cemetery 2020
Dimensions [cm]	length 1.84, width 1.14; maximum thickness 0.44
Weight [g]	2,301
Raw material	Cu alloy
Procedure	no. 1

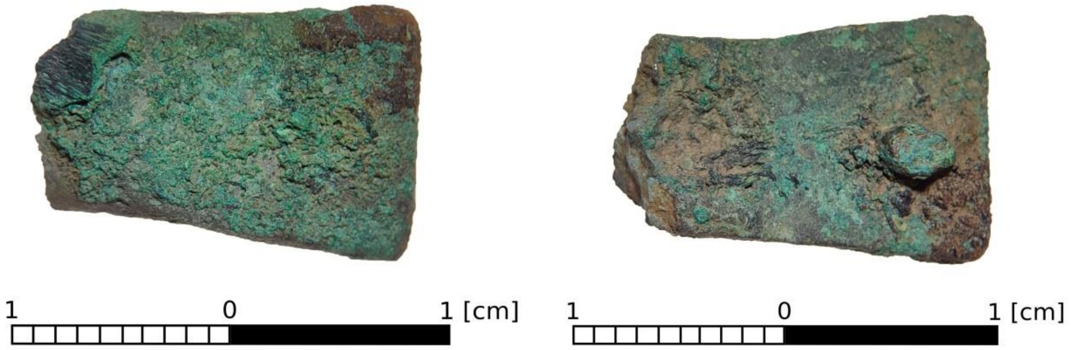


Figure 29. Strap end, find no. 106 - before conservation

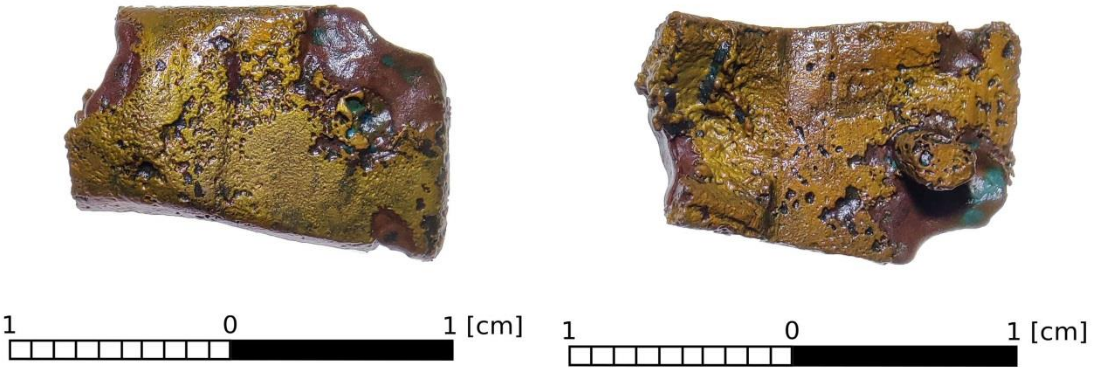


Figure 30. Strap end, find no. 106 - after conservation

7.7. Tortoise brooch, find no. 107

Item	Tortoise brooch
Inv . No.	107
Site	Aska West Cemetery 2020
Dimensions [mm]	3,33 x 2,22 x 0,13
Weight [g]	5,048
Raw material	Cu alloy
Procedure	no. 1

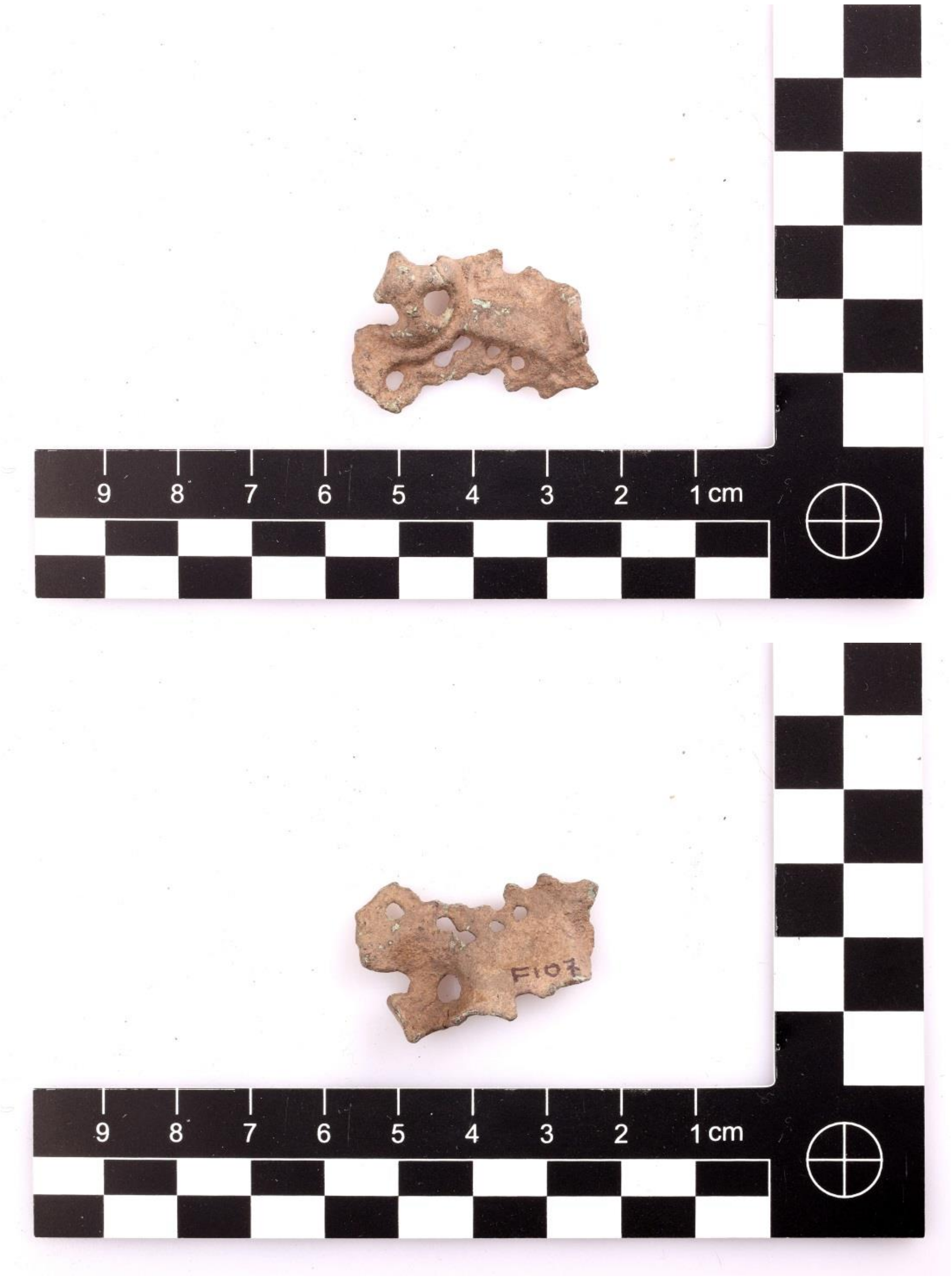


Figure 31. Tortoise brooch, find no. 107 - before conservation

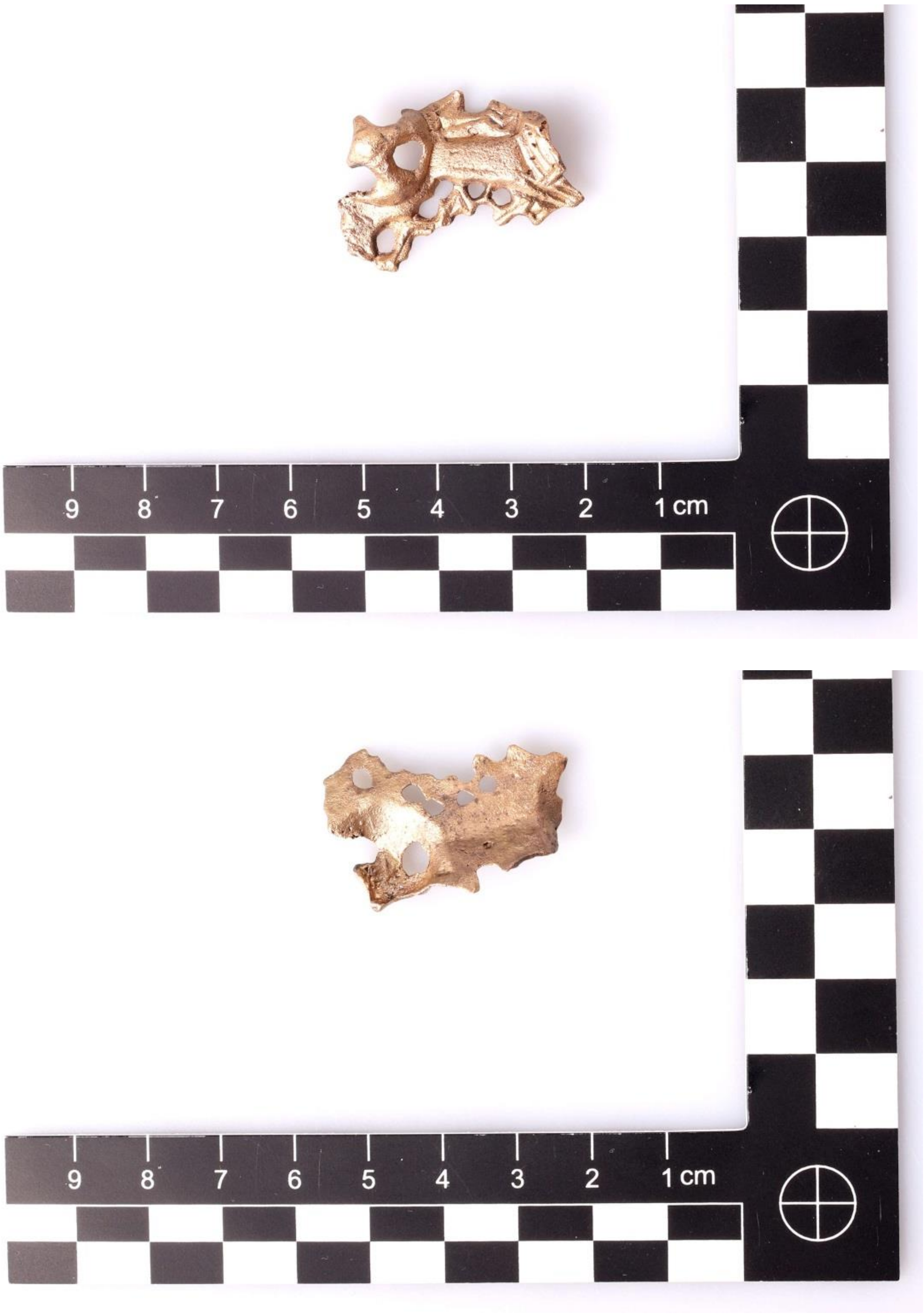


Figure 32. Tortoise brooch, find no. 107 - after conservation

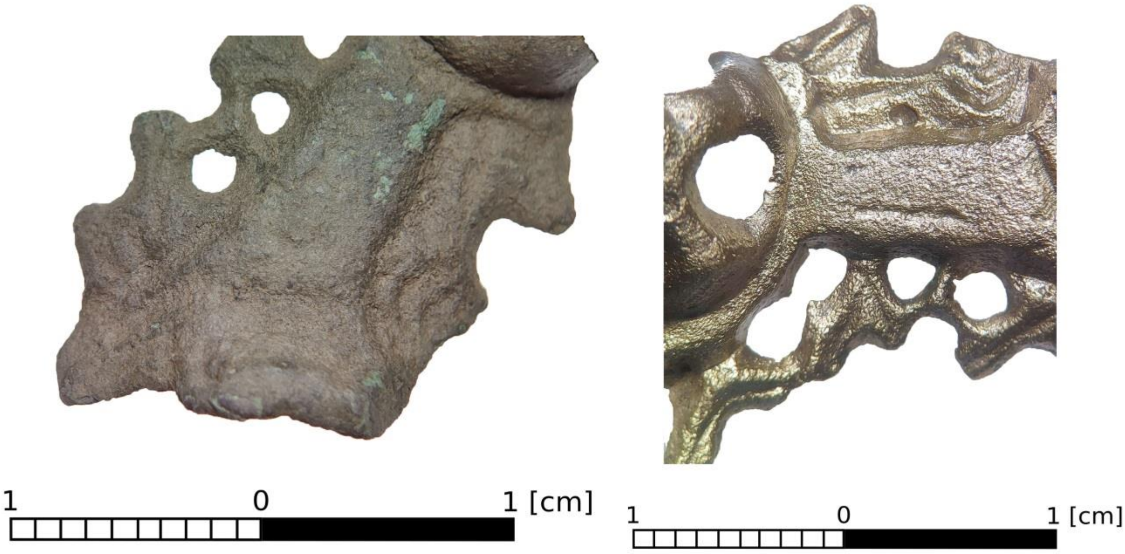


Figure 33. Tortoise brooch, find no. 107 - before and after conservation - close up

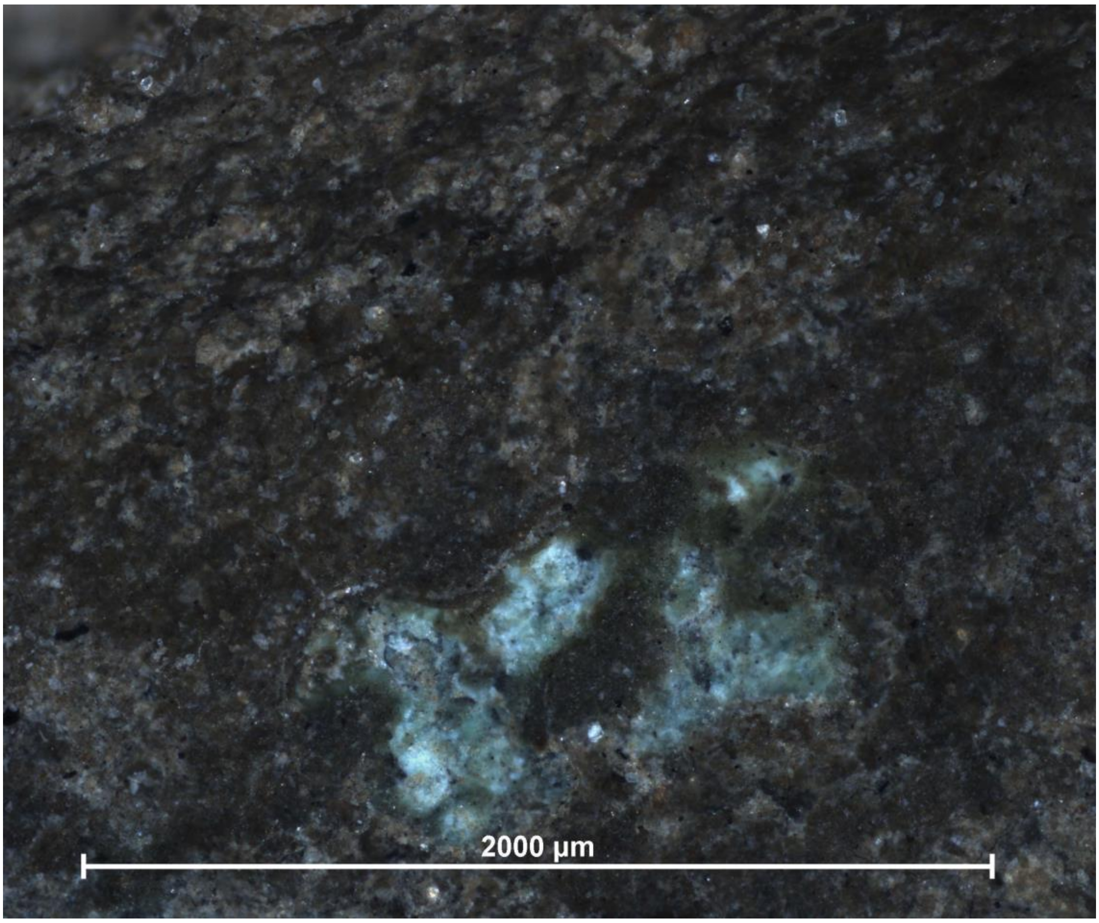


Figure 34. Tortoise brooch, find no. 107 - image from the Nikon Eclipse LV 150 N microscope

7.8. Tortoise brooch, find no. 108

Item	Tortoise brooch
Inv . No.	108
Site	Aska West Cemetery 2020
Dimensions [cm]	5,09 x 2,08 x 0,14
Weight [g]	7,345
Raw material	Cu alloy
Procedure	no. 1

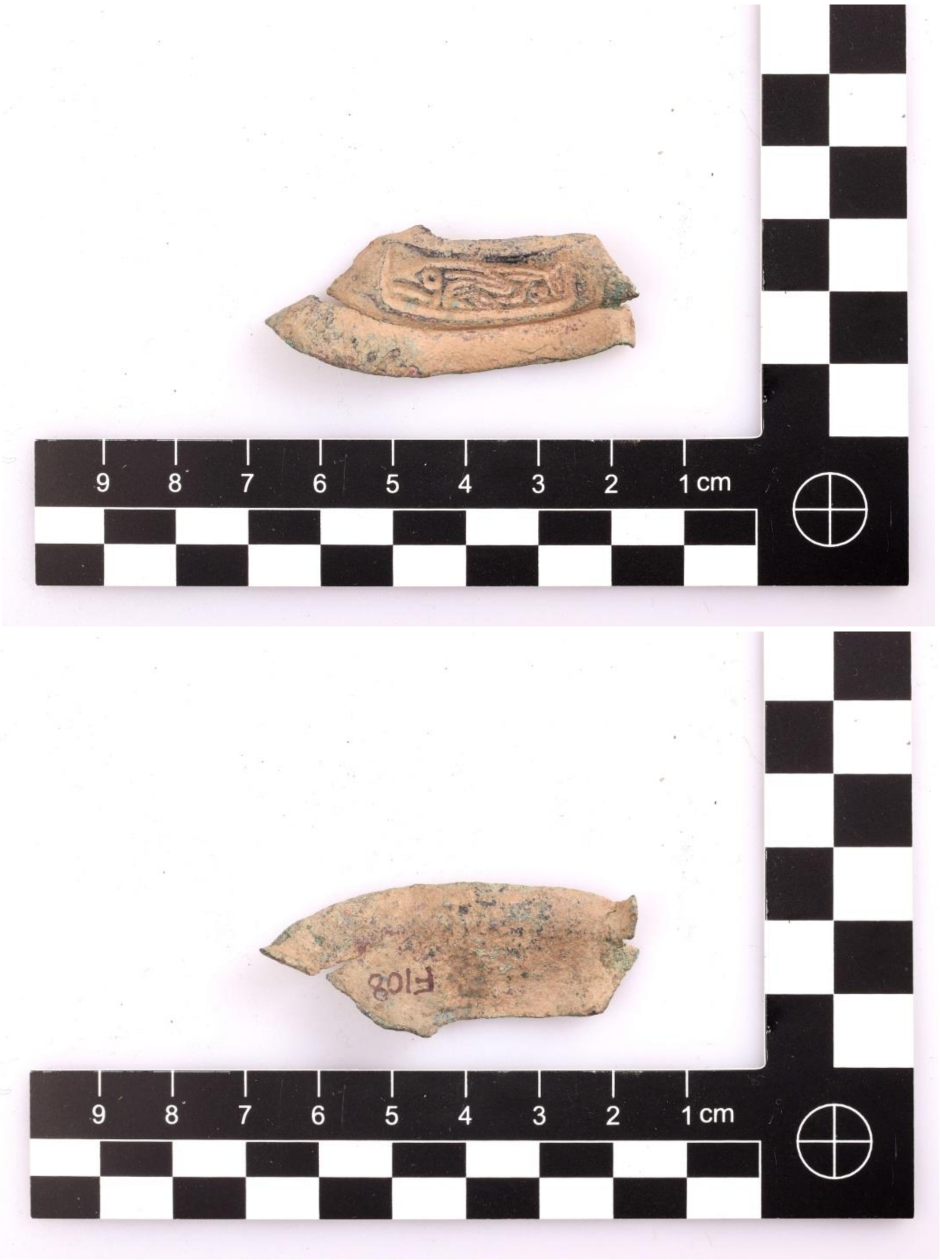


Figure 35. Tortoise brooch, find no. 108 - before conservation

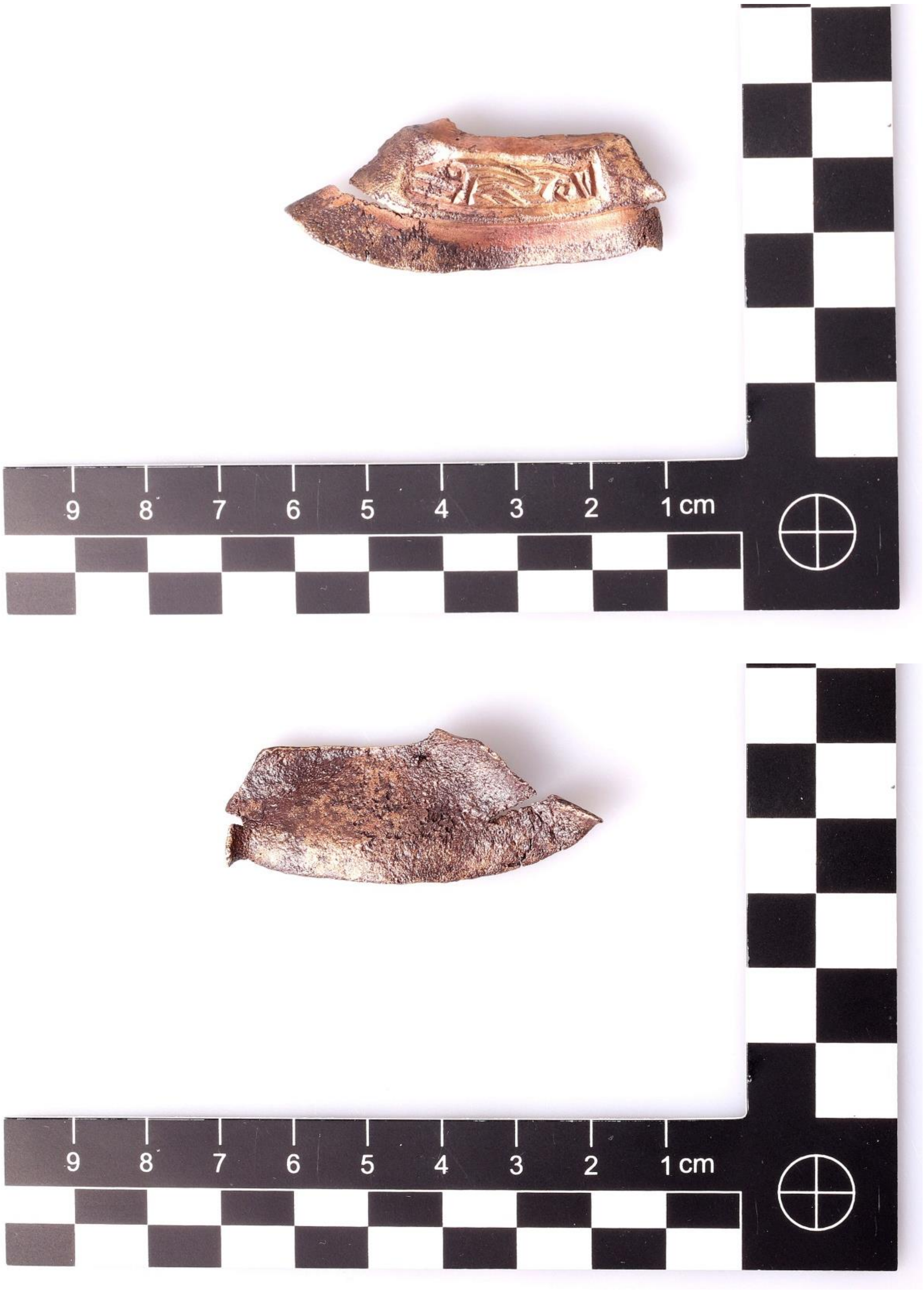


Figure 36. Tortoise brooch, find no. 108 - after conservation

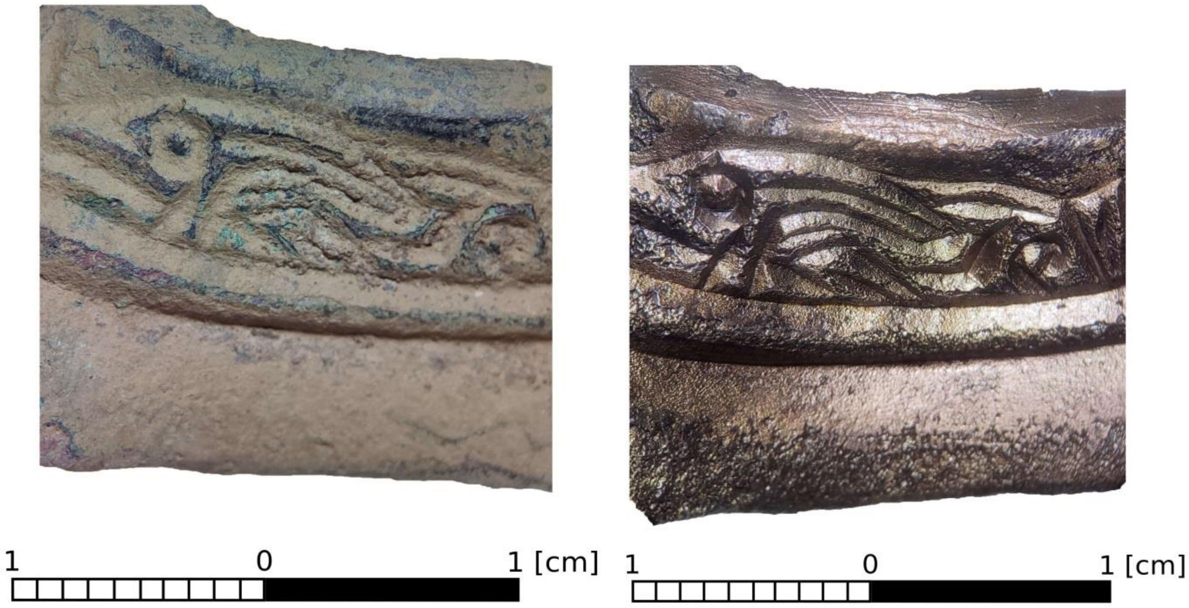


Figure 37. Tortoise brooch, find no. 108 - before and after conservation - close up

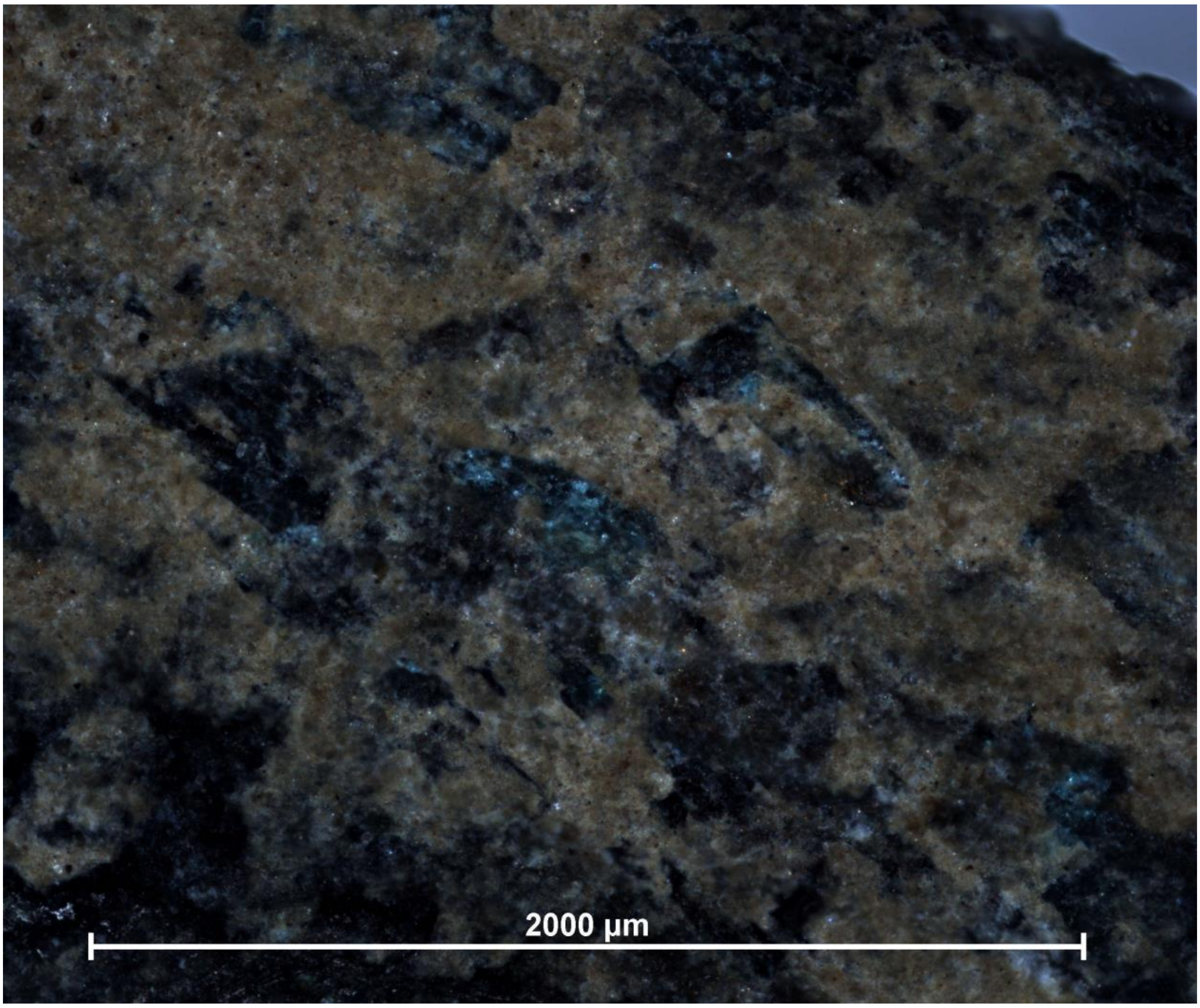


Figure 38. Tortoise brooch, find no. 108 - image from the Nikon Eclipse LV 150 N microscope

7.9. Key, find no. 109

Item	**Key**
Inv . No.	109
Site	Aska West Cemetery 2020
Dimensions [cm]	3.16 (length) x 1.70 (mesh diameter) x 1.22 (working part width) x 0.28 (total thickness)
Weight [g]	3,393
Raw material	Cu alloy
Procedure	no. 1

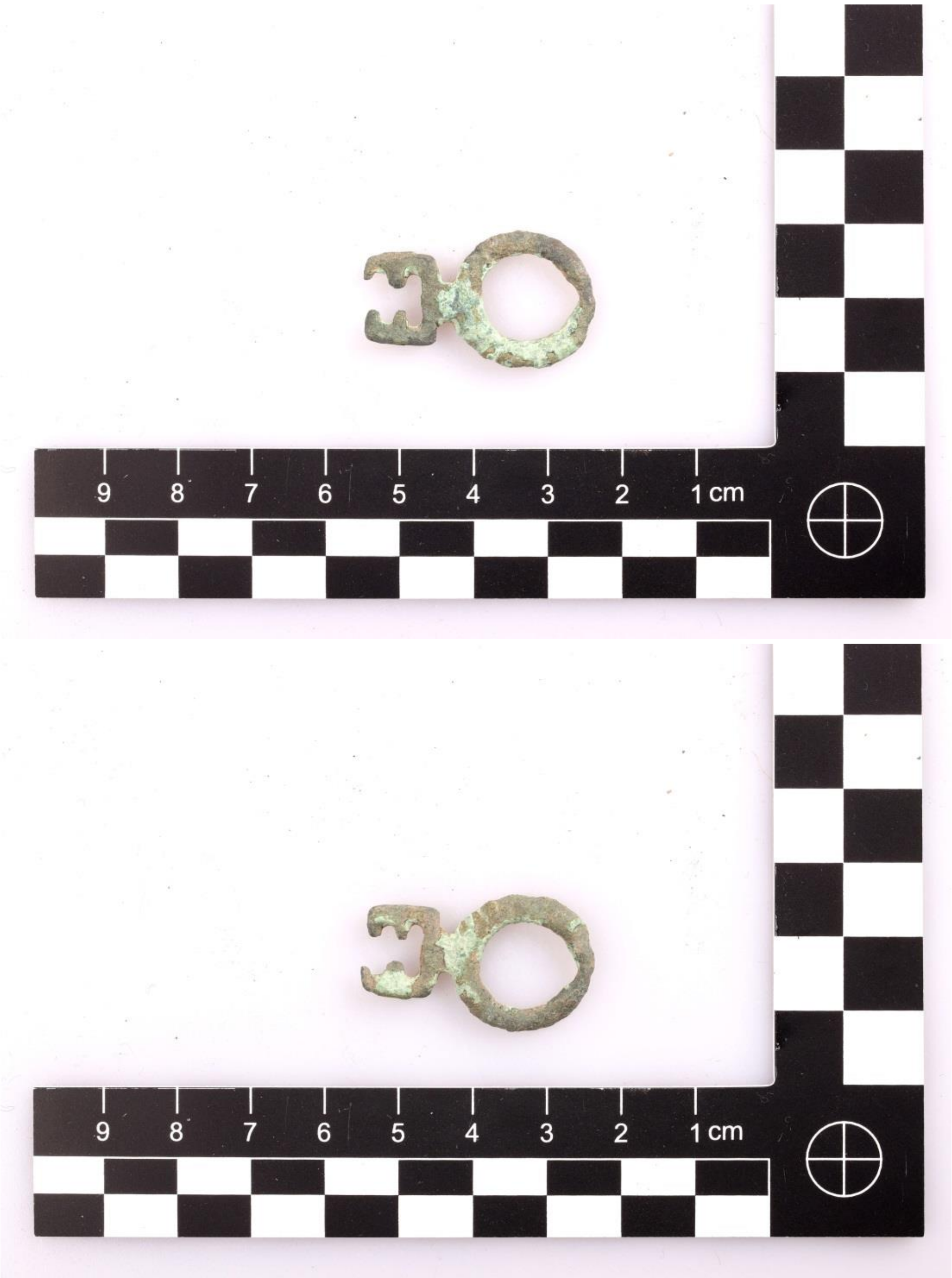


Figure 39. Key, find no. 109 - before conservation

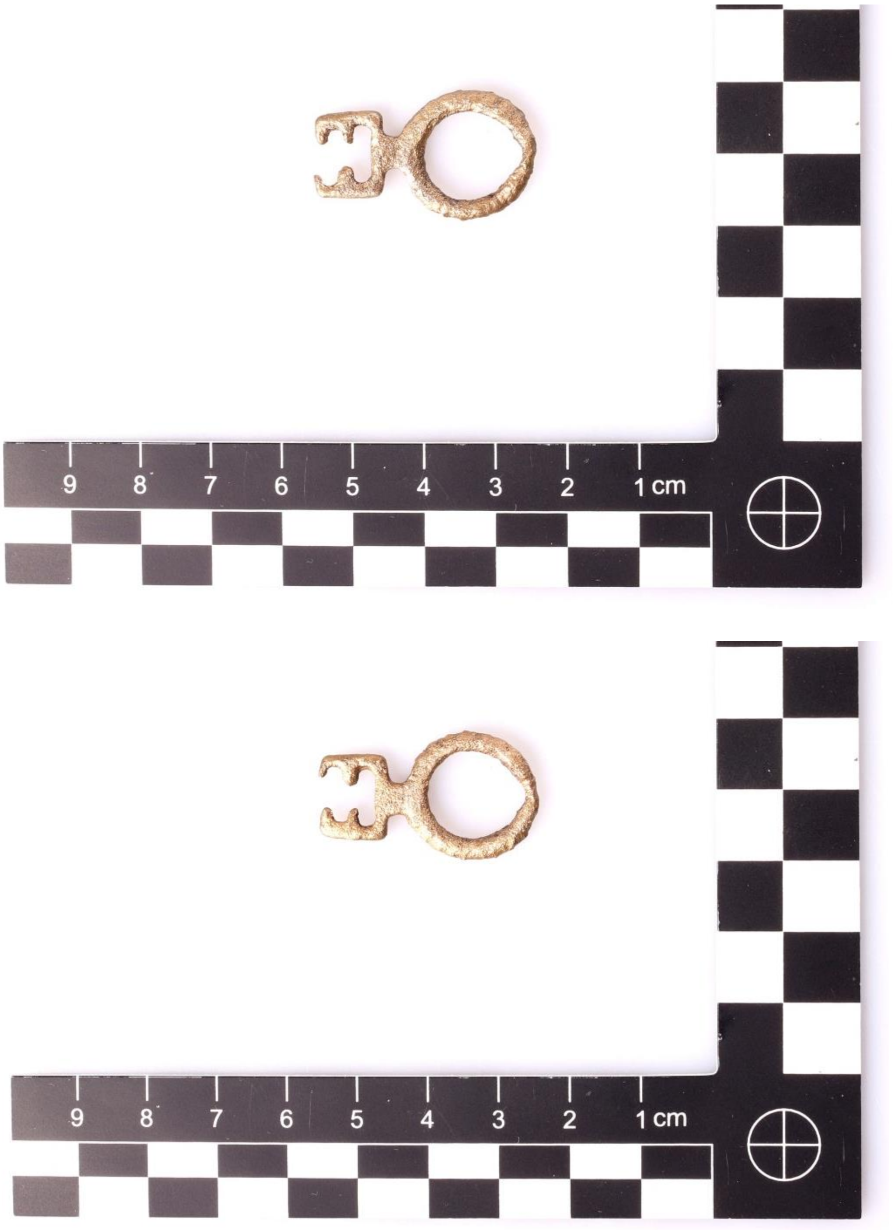


Figure 40. Key, find no. 109 - after conservation

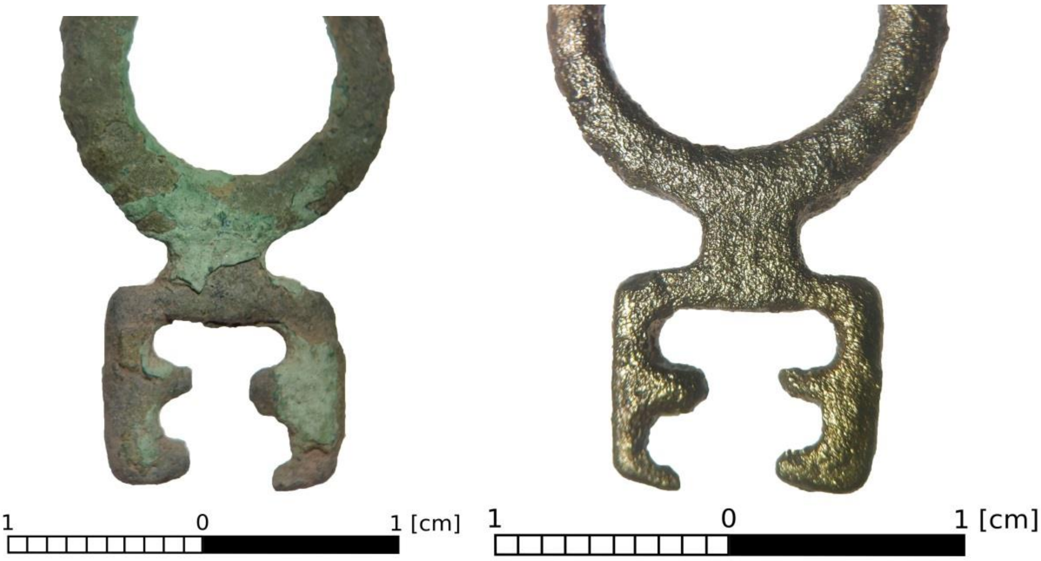


Figure 41. Key, find no. 109 - before and after conservation

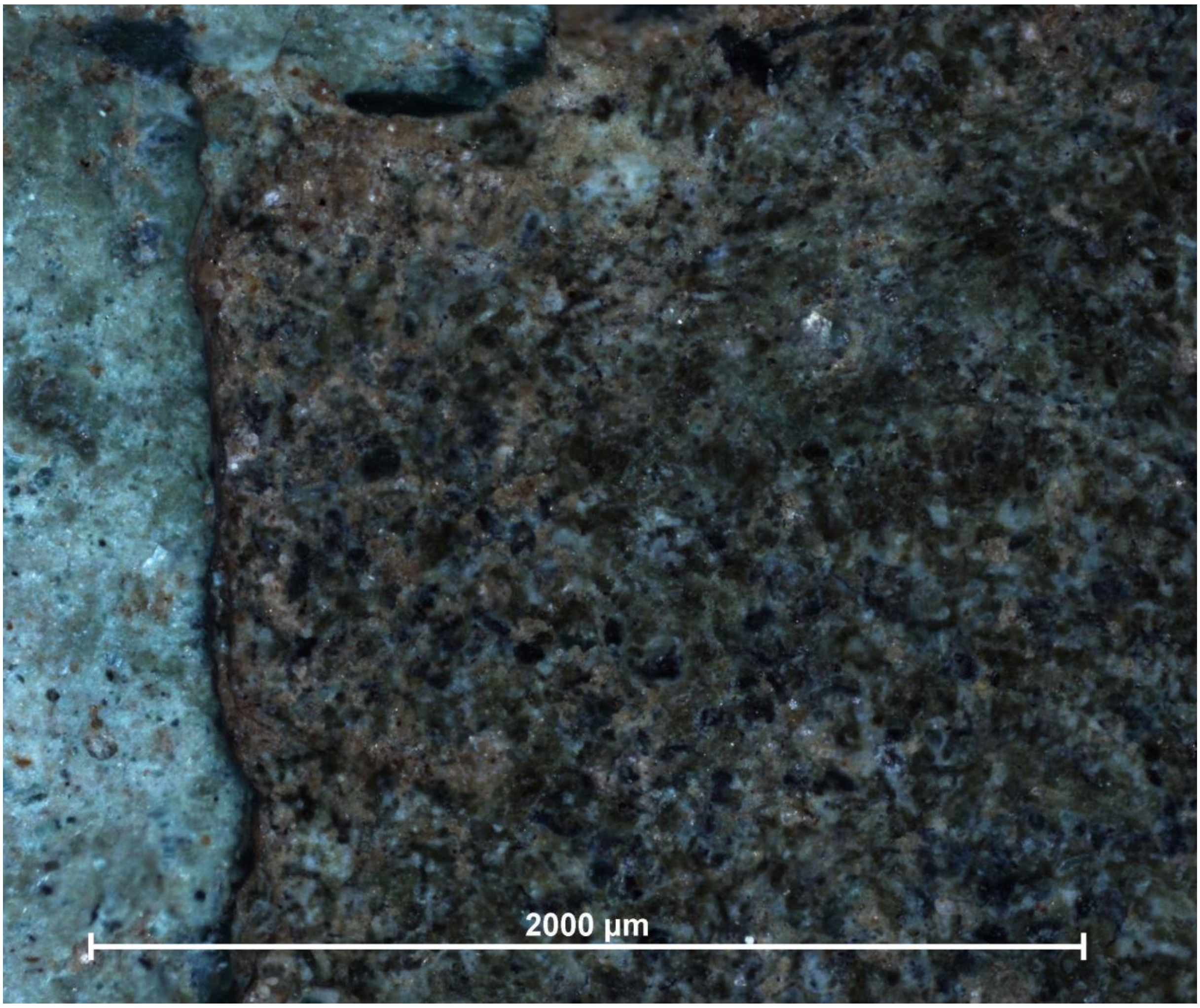


Figure 42. Key, find no. 109 - image from the Nikon Eclipse LV 150 N microscope

7.10. Tortoise brooch, find no. 110

Item	**Tortoise brooch**
Inv . No.	110
Site	Aska West Cemetery 2020
Dimensions [cm]	1.30 x 1.19 x 0.88 (H)
Weight [g]	1,687
Raw material	Cu alloy
Procedure	no. 1

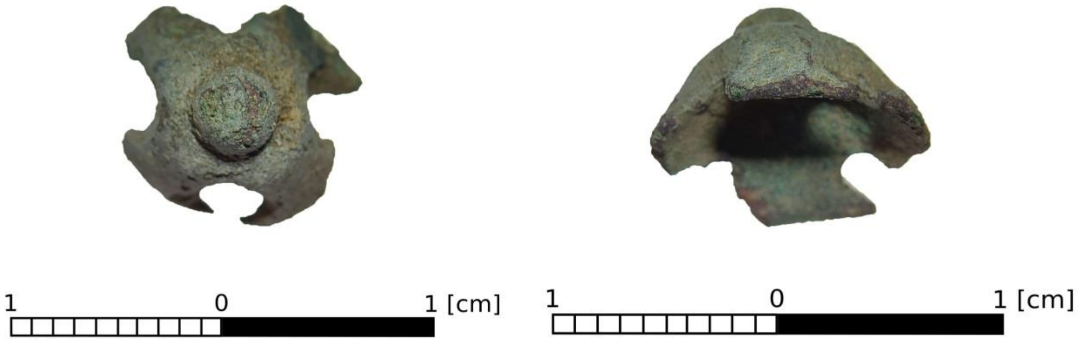


Figure 43. Tortoise brooch, find no. 110 - before conservation

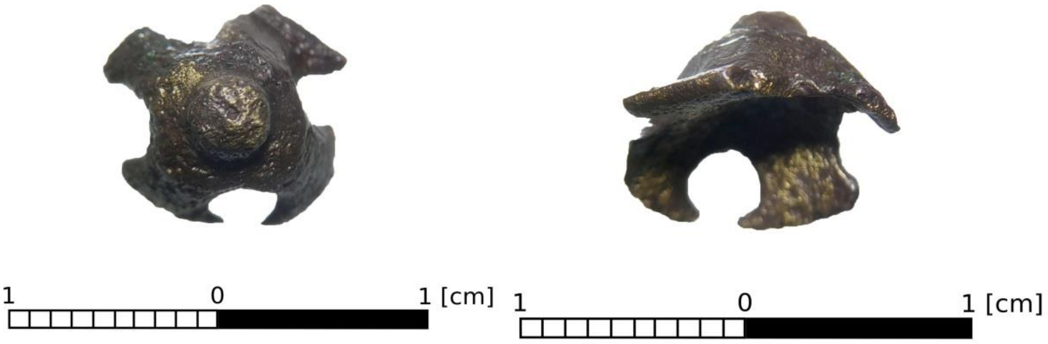


Figure 44. Tortoise brooch, find no. 110 - after conservation

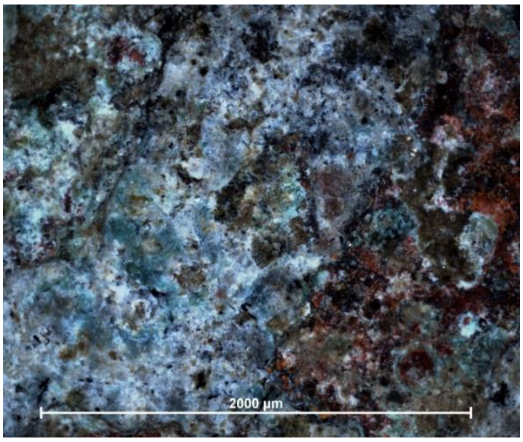


Figure 45. Tortoise brooch, find no. 110 - image from the Nikon Eclipse LV 150 N microscope

7.11. Handle fitting, find no. 112

Item	**Handle fitting**
Inv . No.	112
Site	Aska West Cemetery 2020
Dimensions [cm]	maximum length 5.82; tile width 2.90 cm; plate thickness 0.14; rod diameter 0.48; rivet minimum diameter 0.42 maximum length 5.82; tile width 2.90 cm; plate thickness 0.14; rod diameter 0.48; minimum rivet diameter 0.42
Weight [g]	8,318
Raw material	Cu alloy
Procedure	no. 1

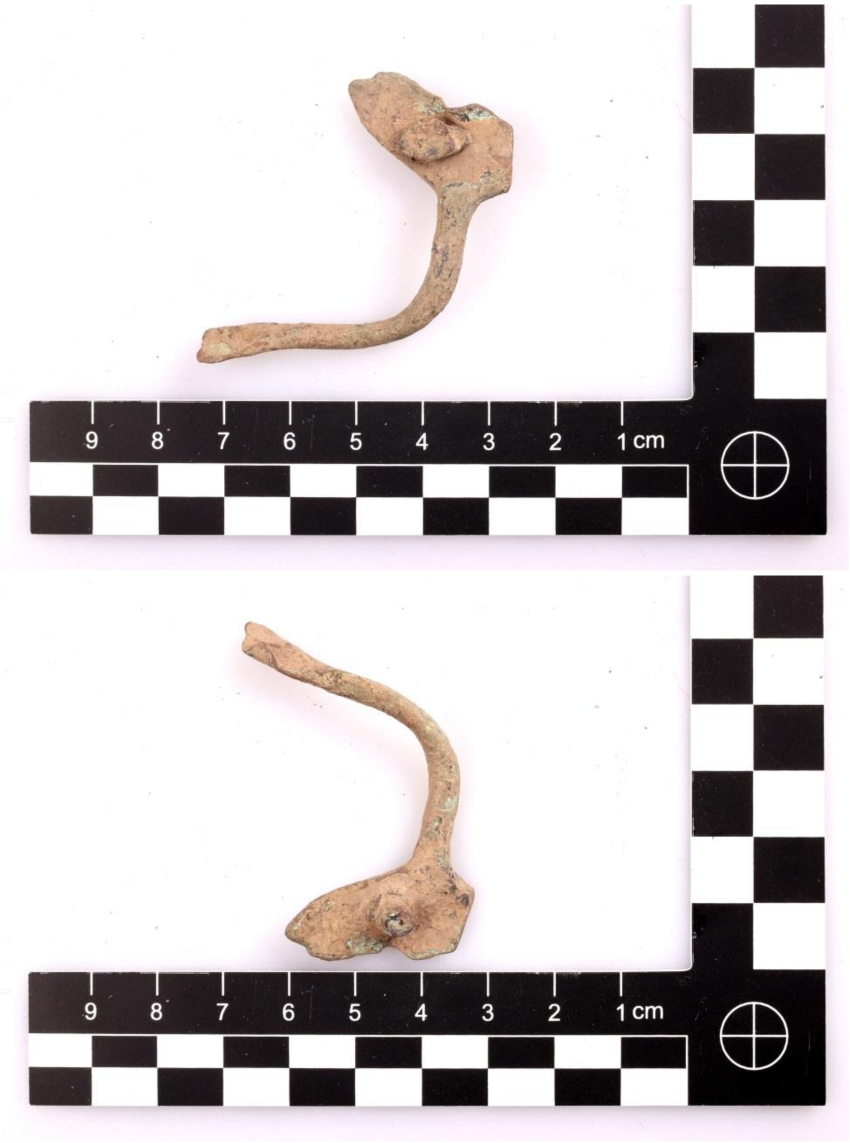


Figure 46. Handle fitting, find no. 112 - before conservation

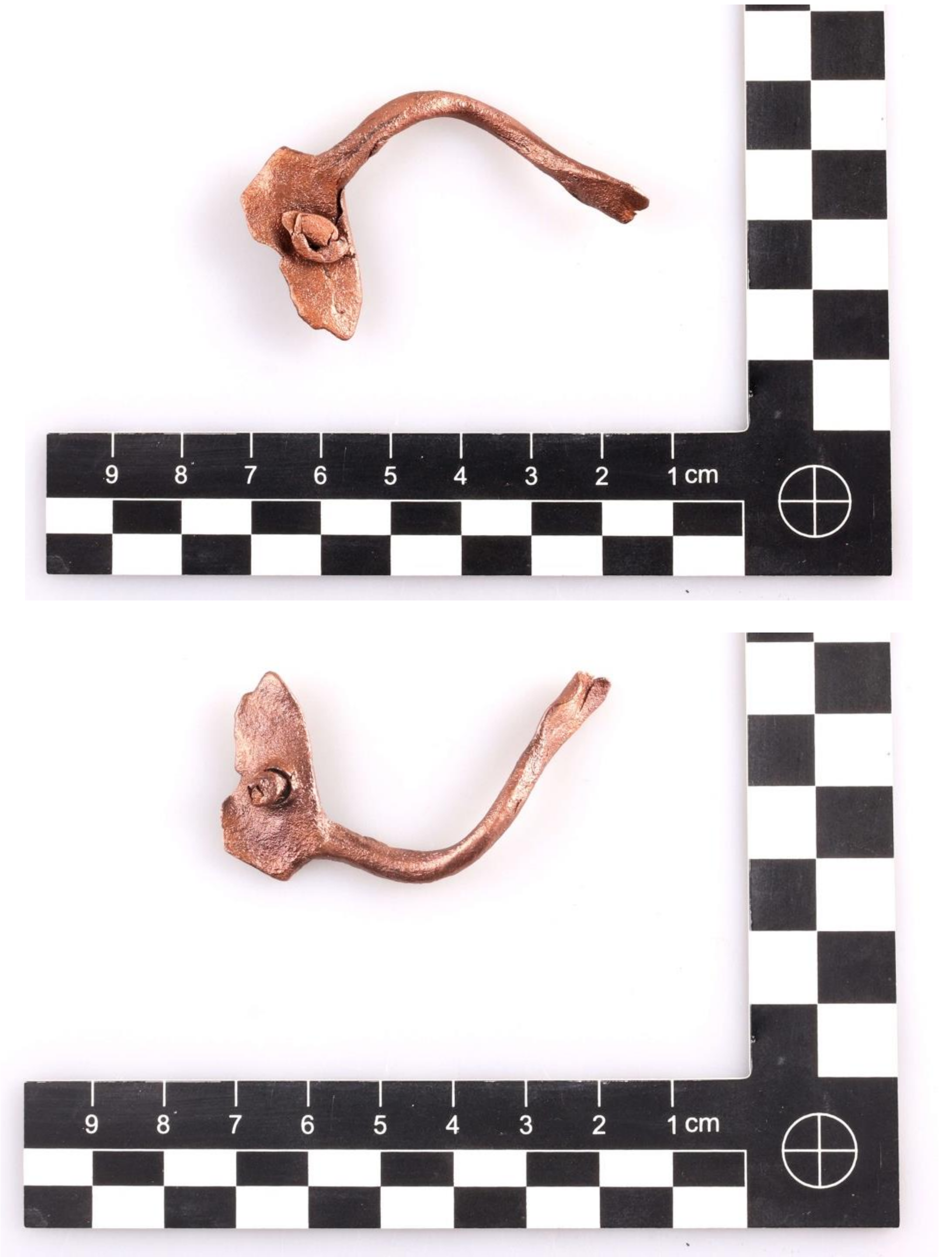


Figure 47. Handle fitting, find no. 112 - after conservation

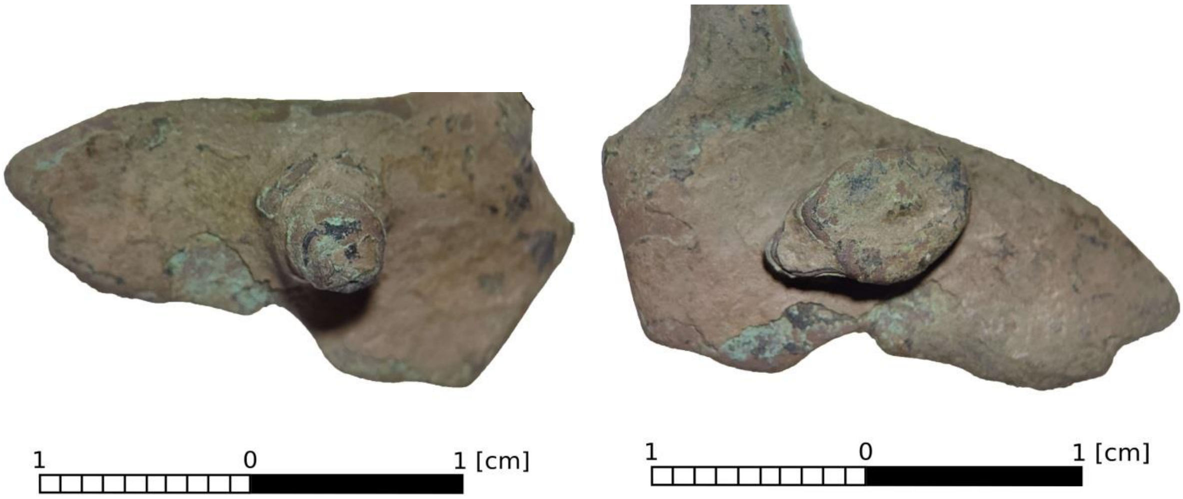


Figure 48. Handle fitting, find no. 112 - before conservation - close up

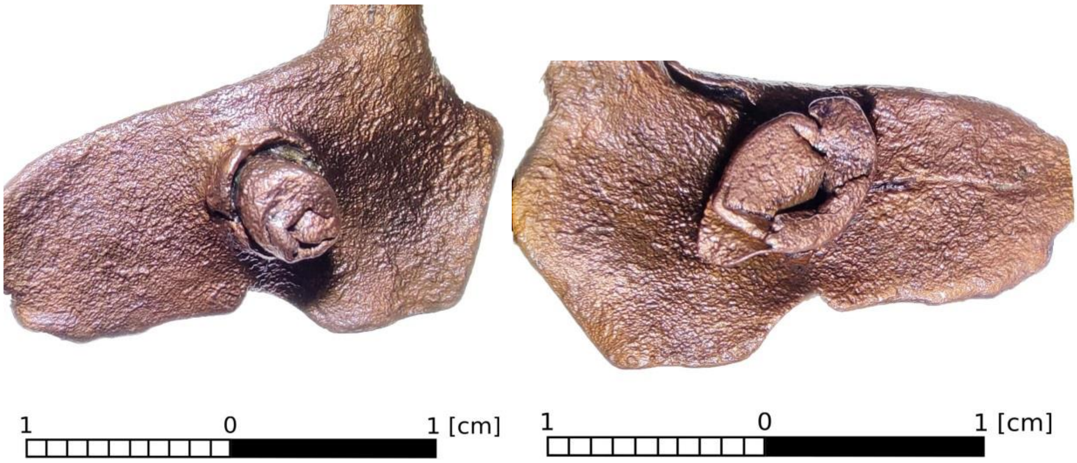


Figure 49. Handle fitting, find no. 112 - after conservation - close up

7.12. Ring, find no. 113

Item	**Ring**
Inv . No.	113
Site	Aska West Cemetery 2020
Dimensions [mm]	inner diameter 17.8, band width 6.8, band thickness 1.00
Weight [g]	2,824
Raw material	Ag alloy
Procedure	no. 2

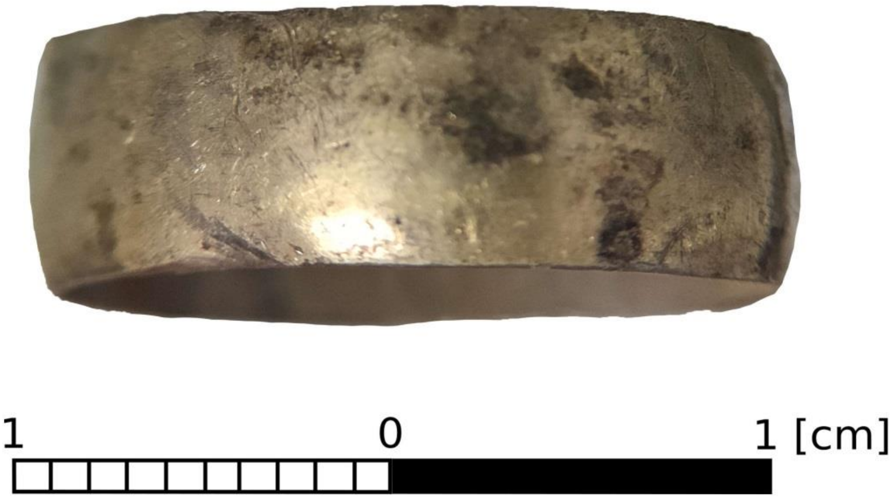


Figure 50. Ring, find no. 113 - before conservation

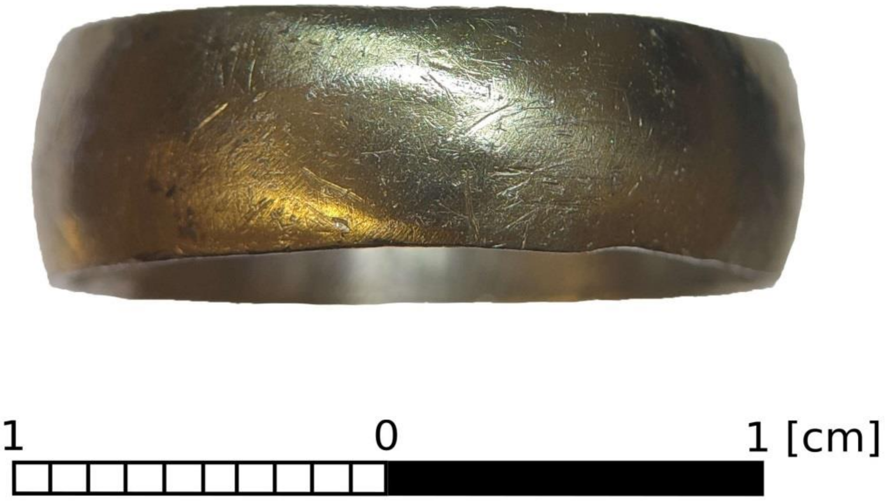


Figure 51. Ring, find no. 113 - after conservation

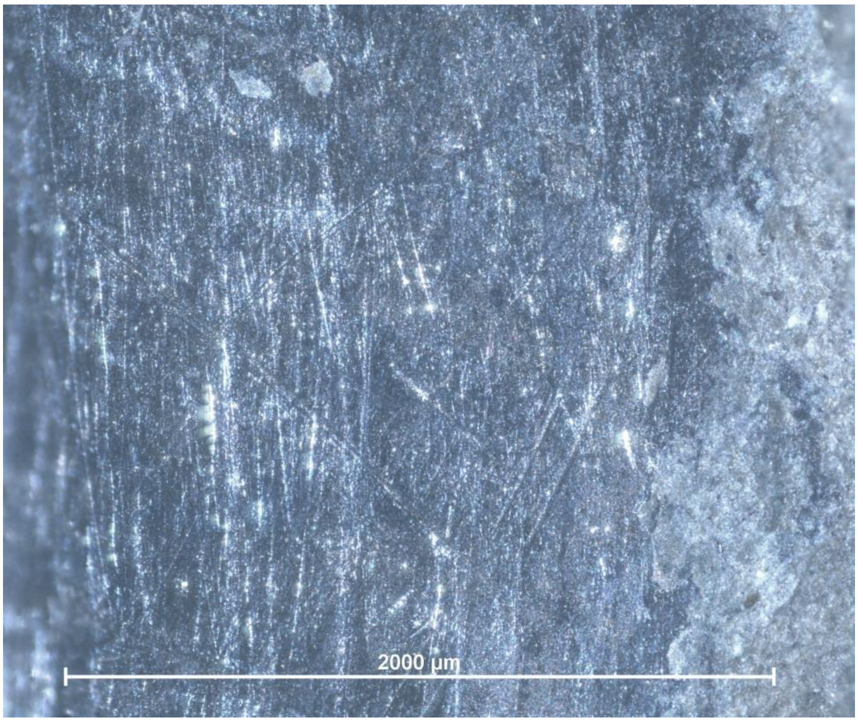


Figure 52. Ring, find no. 113 - before conservation - image from the Nikon Eclipse LV 150 N microscope

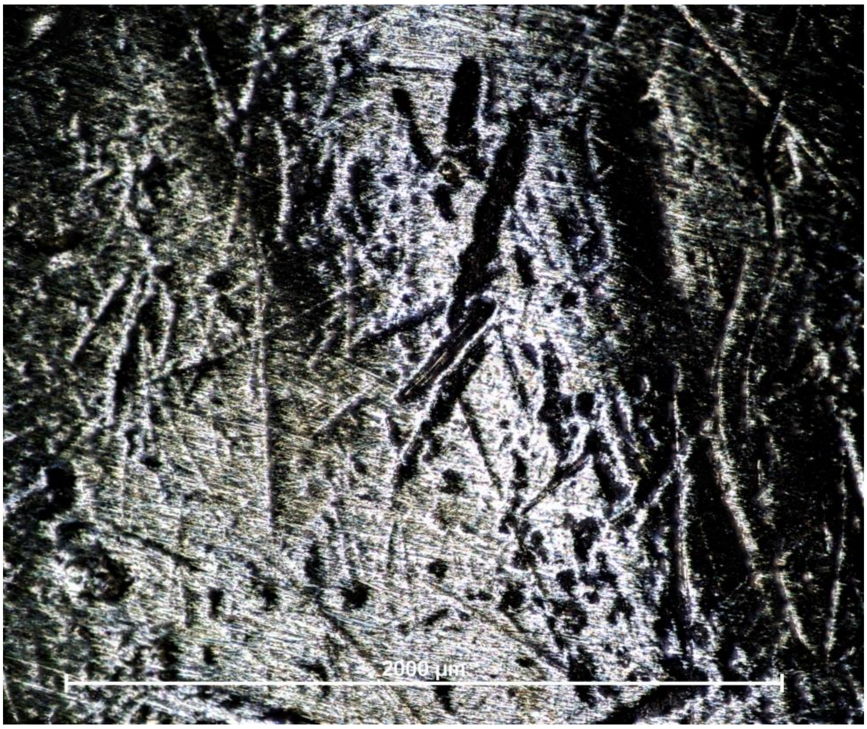
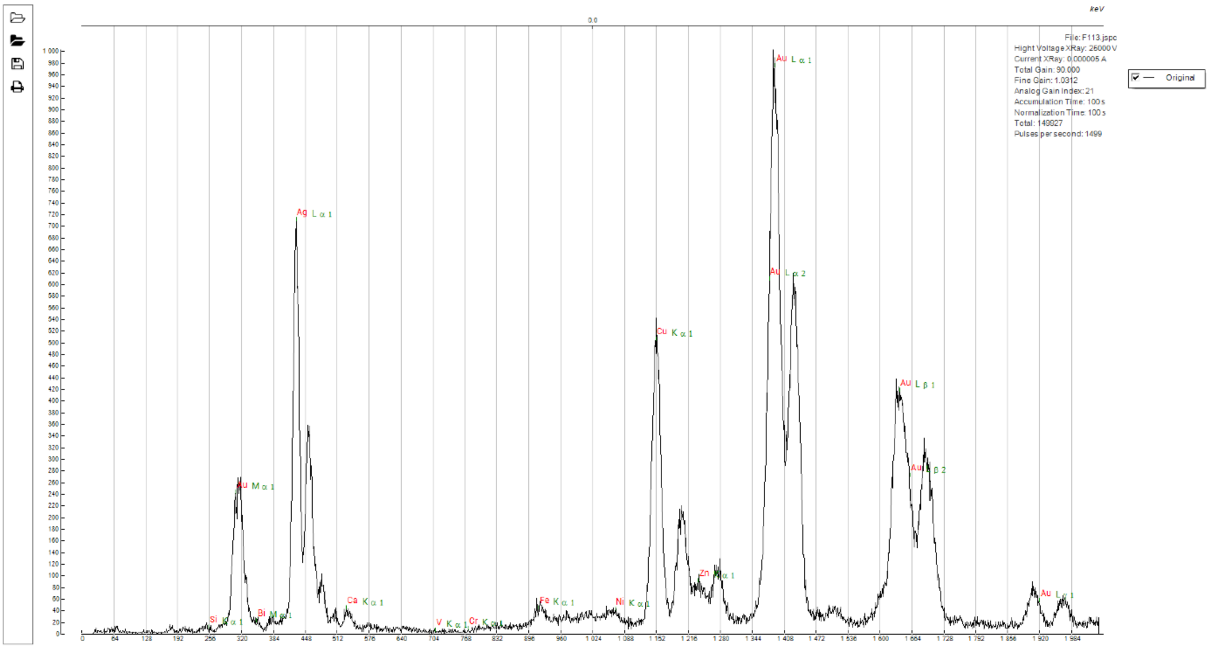


Figure 53. Ring, find no. 113 - after conservation - image from the Nikon Eclipse LV 150 N microscope



File: F113.jspc
Hight Voltage XRay: 25000 V
Current XRay: 0.000005 A
Total Gain: 90.000
Fine Gain: 1.0312
Analog Gain Index: 21
Accumulation Time: 100 s
Normalization Time: 100 s
Total: 149927
Pulses per second: 1499

Figure 54. Ring, find no. 113 - spectrogram

7.13. Thimble, find no. 114

Item	**Thimble**
Inv . No.	114
Site	Aska West Cemetery 2020
Dimensions [mm]	1.92 (diameter) x 1.52 x 0.09
Weight [g]	4,114
Raw material	Cu alloy
Procedure	no. 1

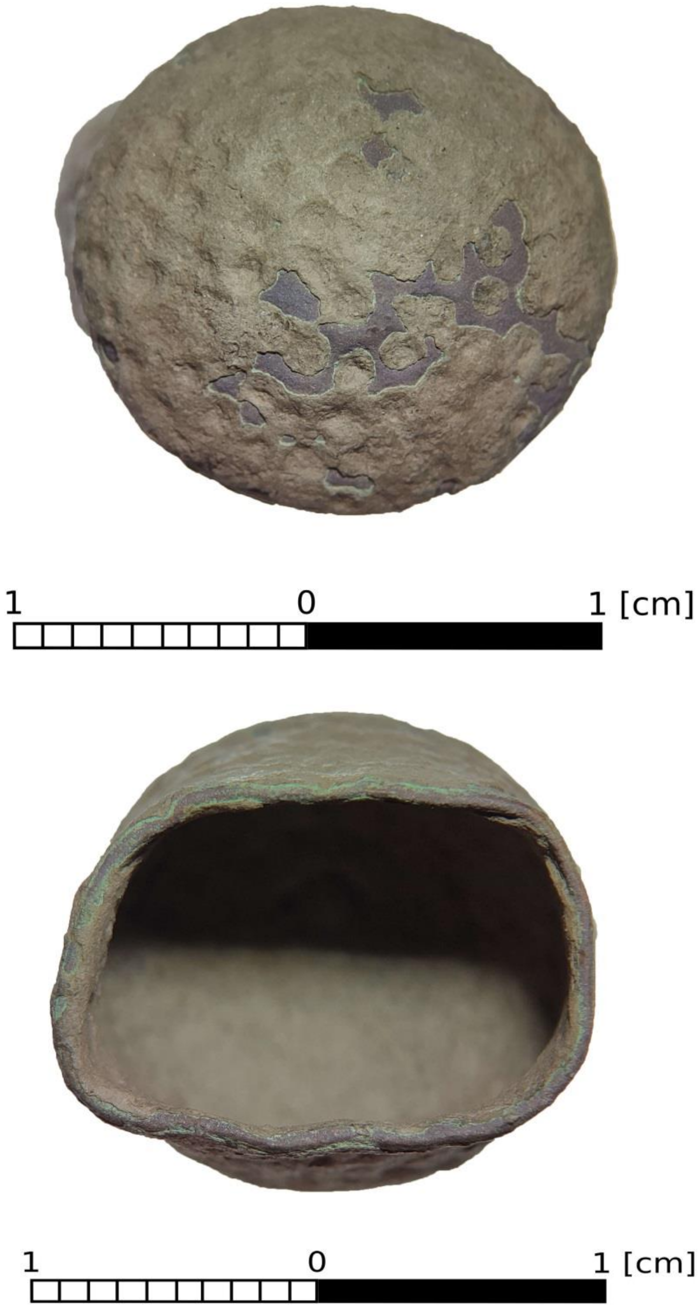


Figure 55. Thimble, find no. 114 - before conservation

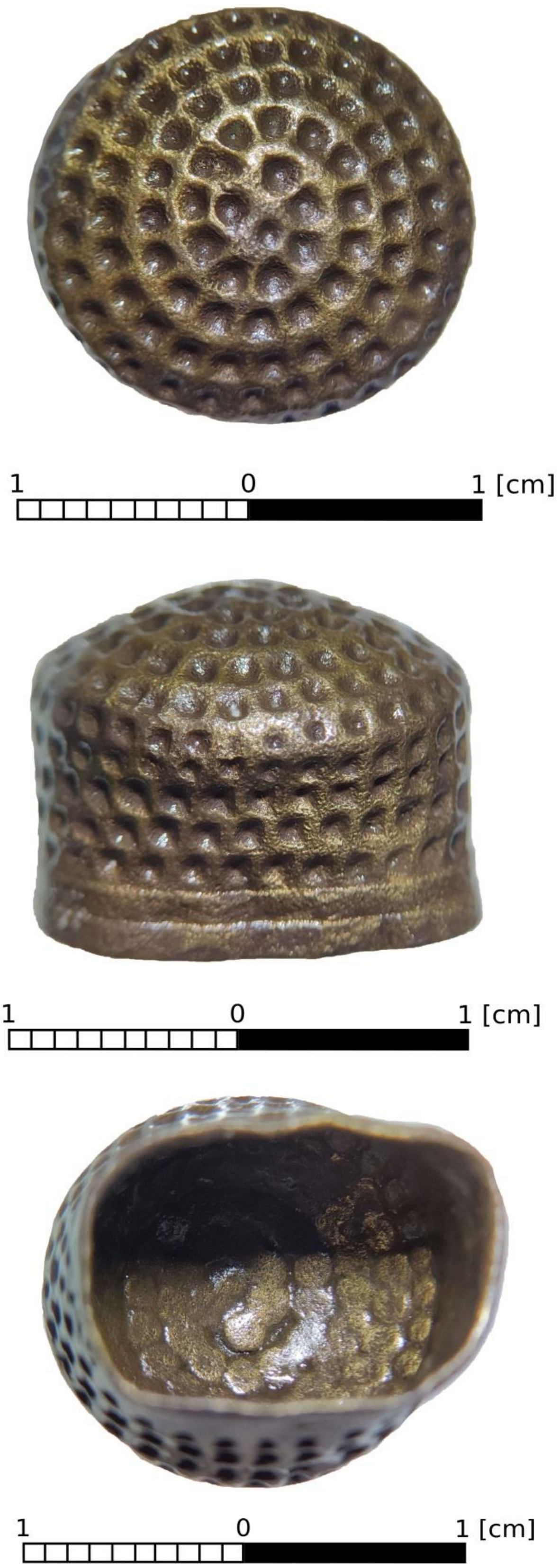


Figure 56. Thimble, find no. 114 - after conservation

7.14. Counterwasher, find no. 115

Item	**Counterwasher**
Inv . No.	115
Site	Aska West Cemetery 2020
Dimensions [cm]	0.88 x 0.82 x 0.1 (thickness); 0.81 (whole) x 0.24 (average diameter)
Weight [g]	0,652
Raw material	Cu alloy
Procedure	no. 1

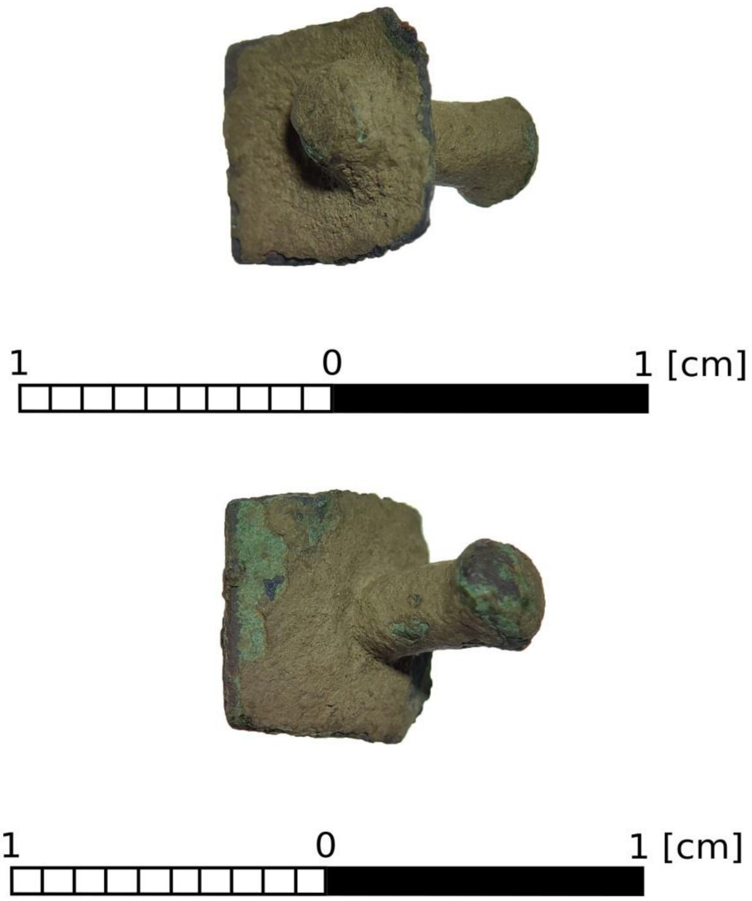


Figure 57. Counterwasher, find no. 115 - before conservation

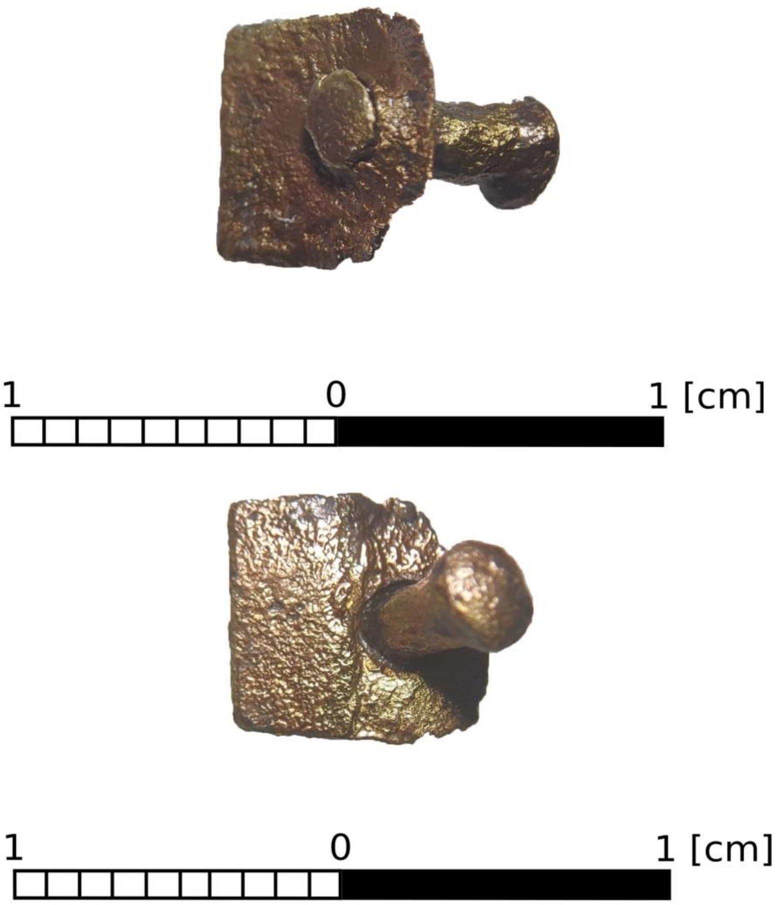


Figure 58. Counterwasher, find no. 115 - after conservation

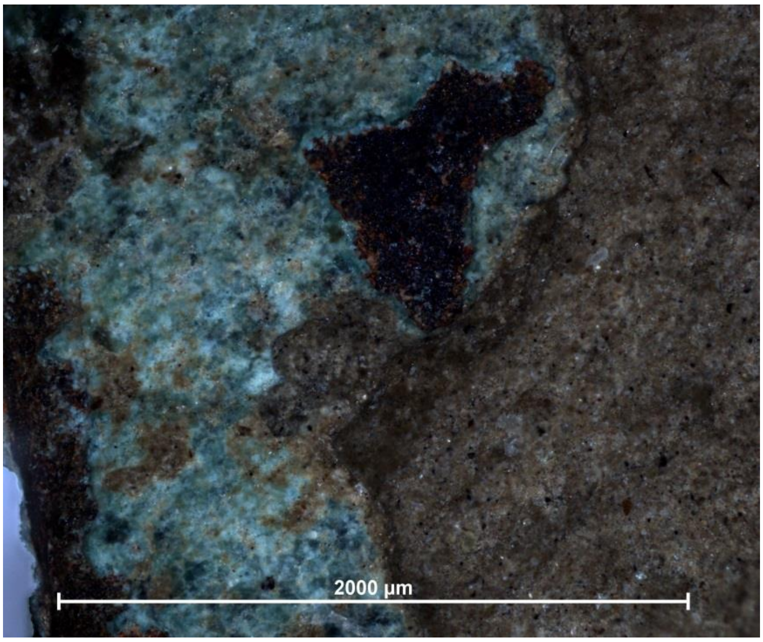


Figure 59. Counterwasher, find no. 115 - image from the Nikon Eclipse LV 150 N microscope

7.15. Thimble, find no. 116

Item	**Thimble**
Inv . No.	116
Site	Aska West Cemetery 2020
Dimensions [mm]	inner diameter: 17.8; maximum height 14.6; thickness 1.0
Weight [g]	4,906
Raw material	Cu alloy
Procedure	no. 1

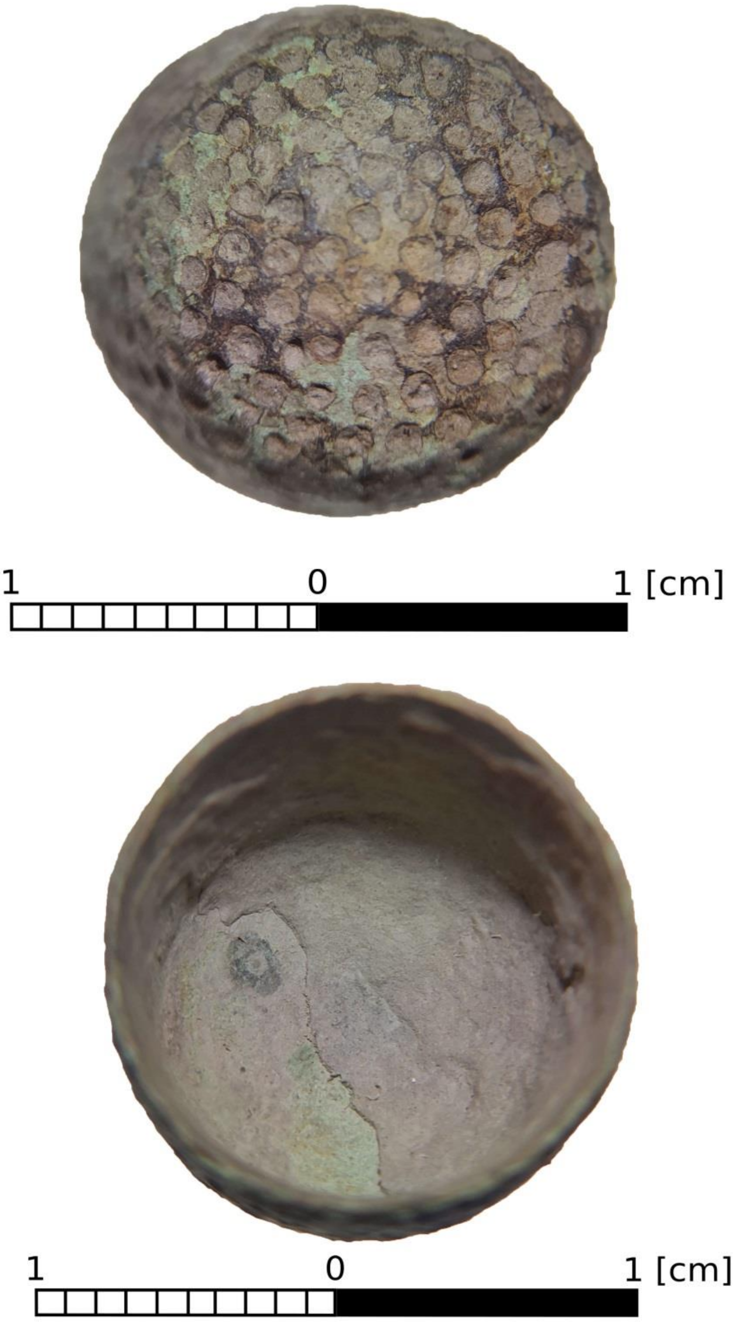


Figure 60. Thimble, find no. 116 - before conservation

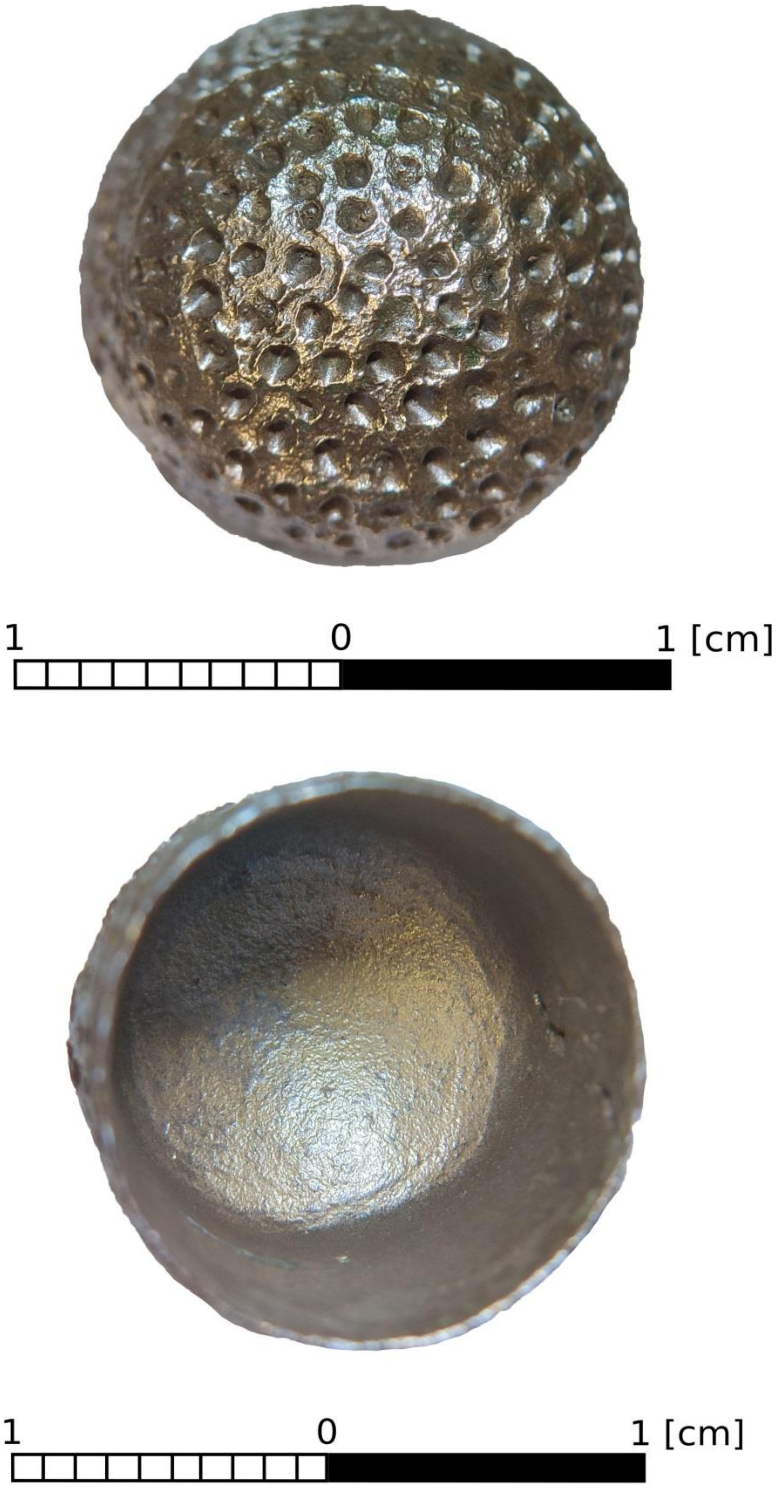


Figure 61. Thimble, find no. 116 - after conservation

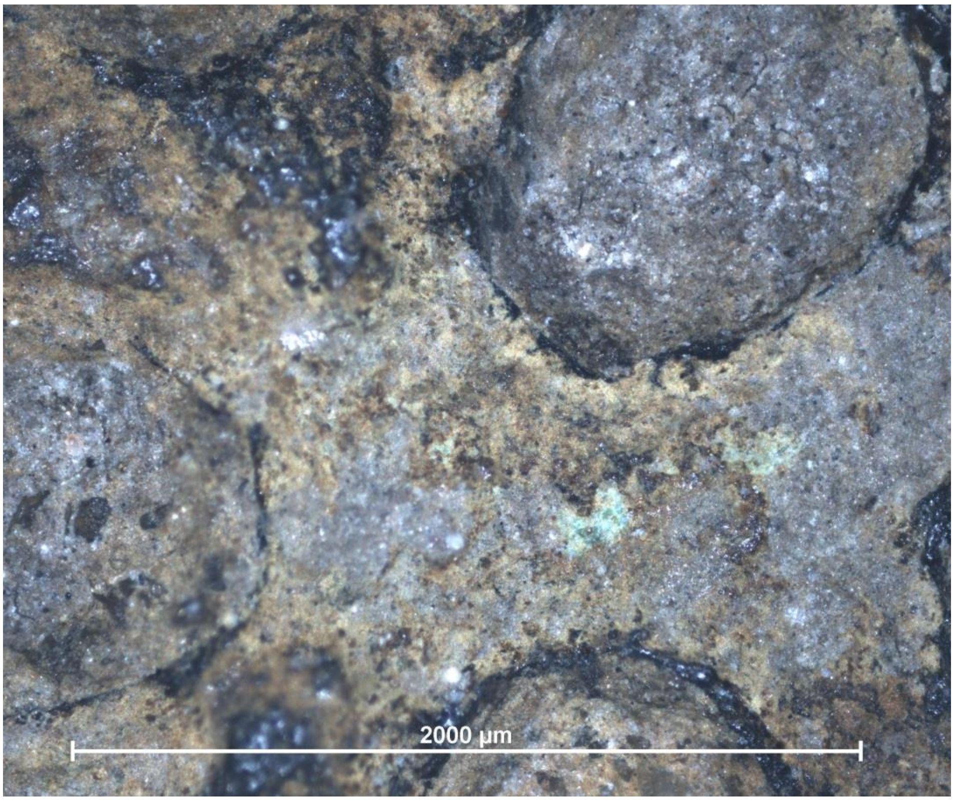


Figure 62. Thimble, find no. 116 - before conservation - image from the Nikon Eclipse LV 150 N microscope

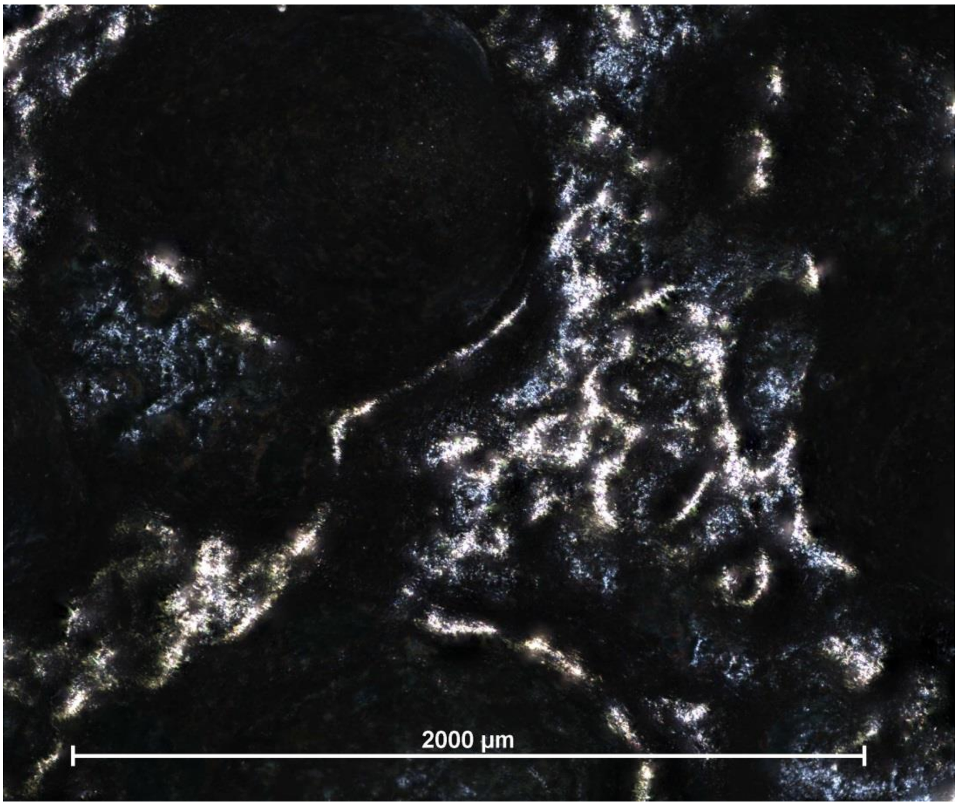


Figure 63. Thimble, find no. 116 - after conservation - image from the Nikon Eclipse LV 150 N microscope

7.16. Tortoise brooch, find no. 117

Item	Tortoise brooch
Inv . No.	117
Site	Aska West Cemetery 2020
Dimensions [cm]	2,17 x 1,31 0,19 (thickness)
Weight [g]	1,944
Raw material	Cu alloy
Procedure	no. 1

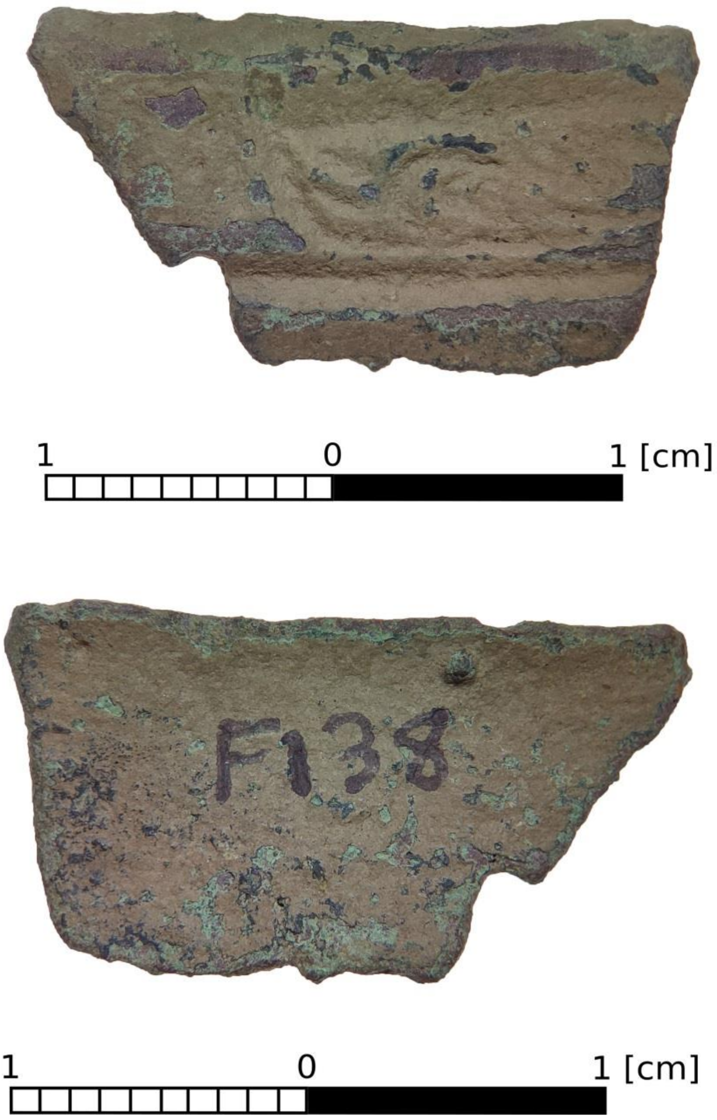


Figure 64. Tortoise brooch, find no. 117 - before conservation

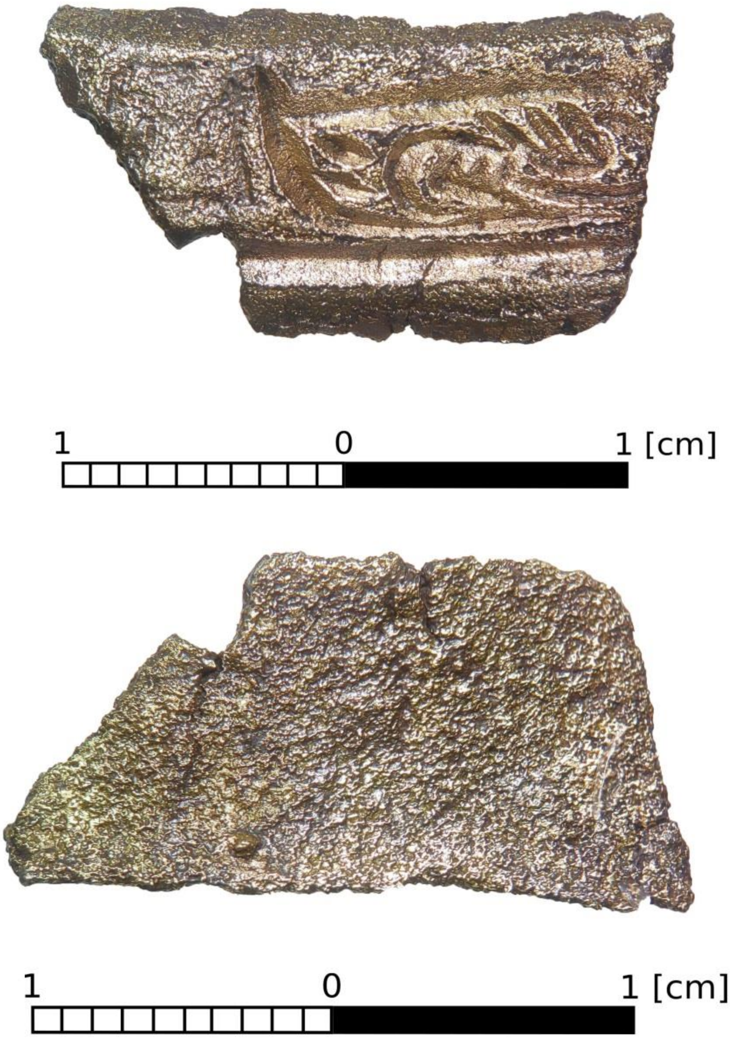


Figure 65. Tortoise brooch, find no. 117 - after conservation

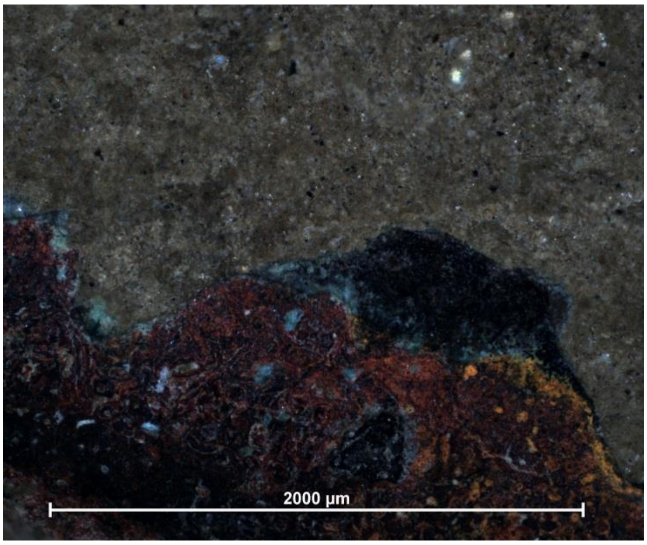


Figure 66. Tortoise brooch, find no. 117 - before conservation - image from the Nikon Eclipse LV 150 N microscope

7.17. Tortoise brooch, find no. 118

Item	**Tortoise brooch**
Inv . No.	118
Site	Aska West Cemetery 2020
Dimensions [cm]	2,05 x 1,64 x 0,07
Weight [g]	2,51
Raw material	Cu alloy
Procedure	no. 1

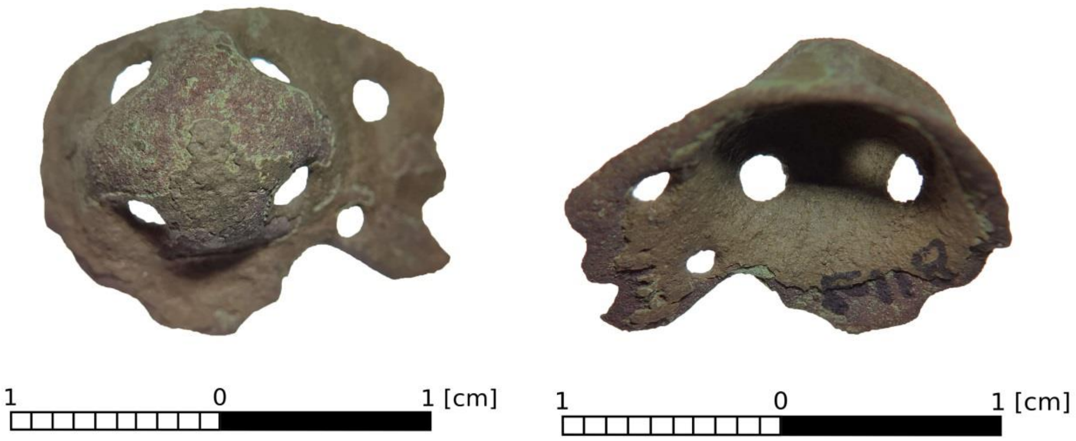


Figure 67. Tortoise brooch, find no. 118 - before conservation

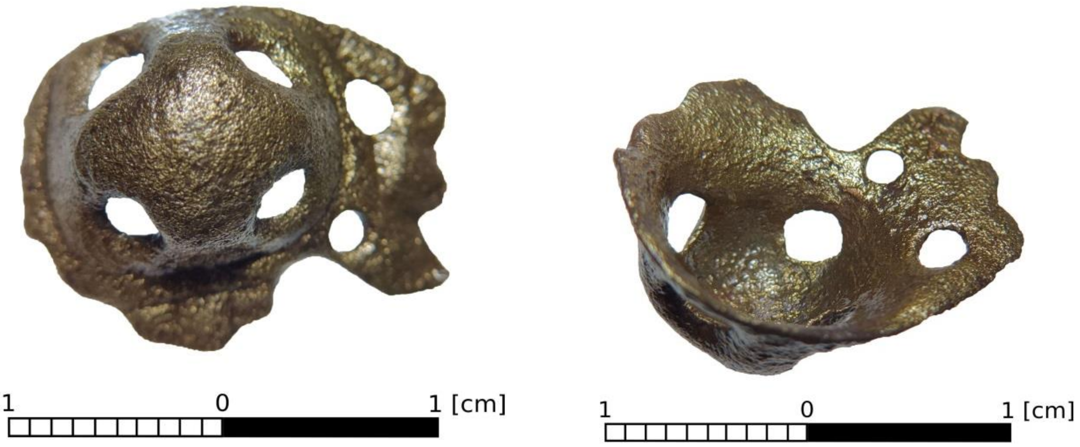


Figure 68. Tortoise brooch, find no. 118 - after conservation

7.18. Tortoise brooch, find no. 119

Item	Tortoise brooch
Inv . No.	119
Site	Aska West Cemetery 2020
Dimensions [cm]	3,13 x 2,0 x 0,16; 0,72 x 0,66 x 0,13
Weight [g]	5,315
Raw material	Cu alloy
Procedure	no. 1

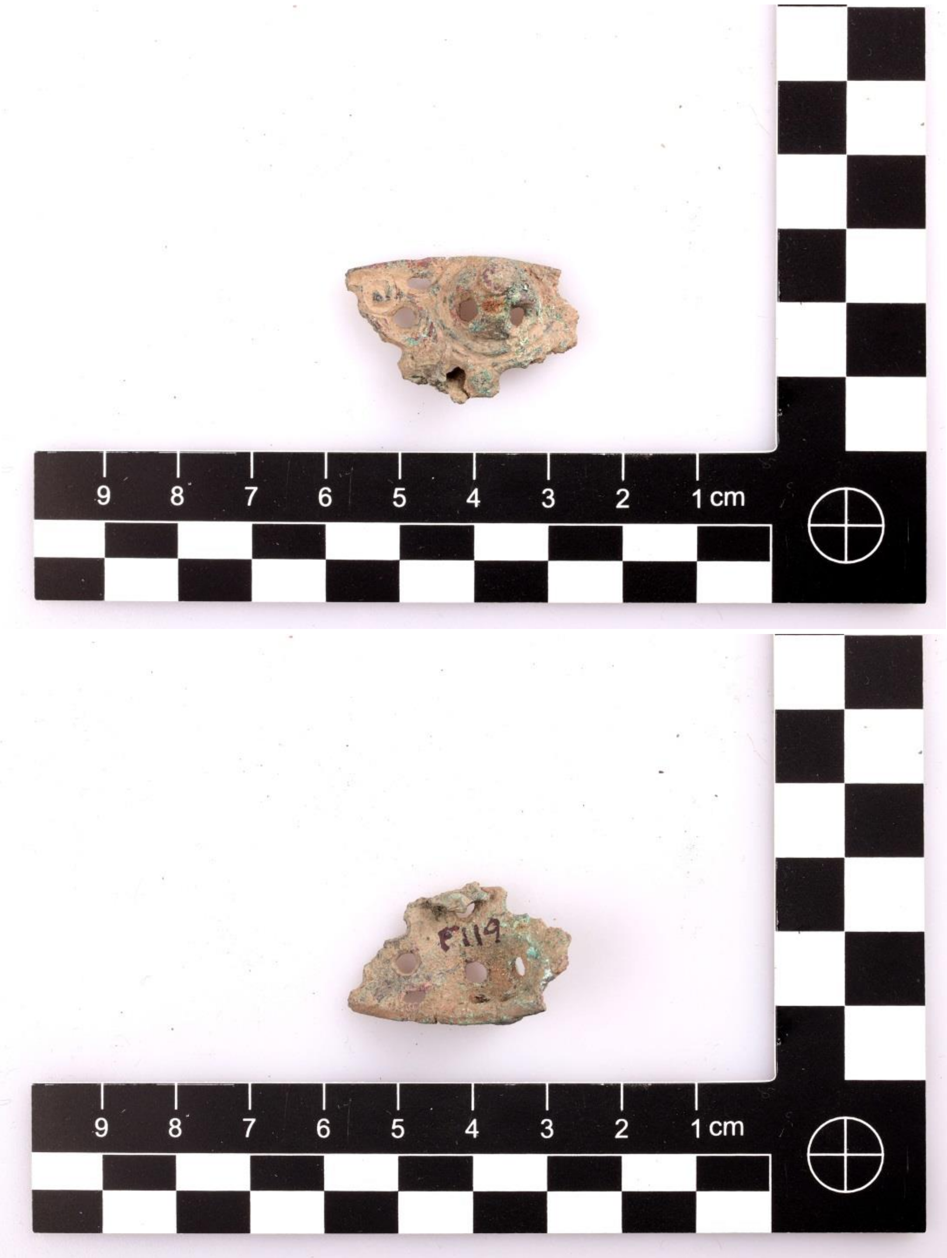


Figure 69. Tortoise brooch, find no. 119 - before conservation

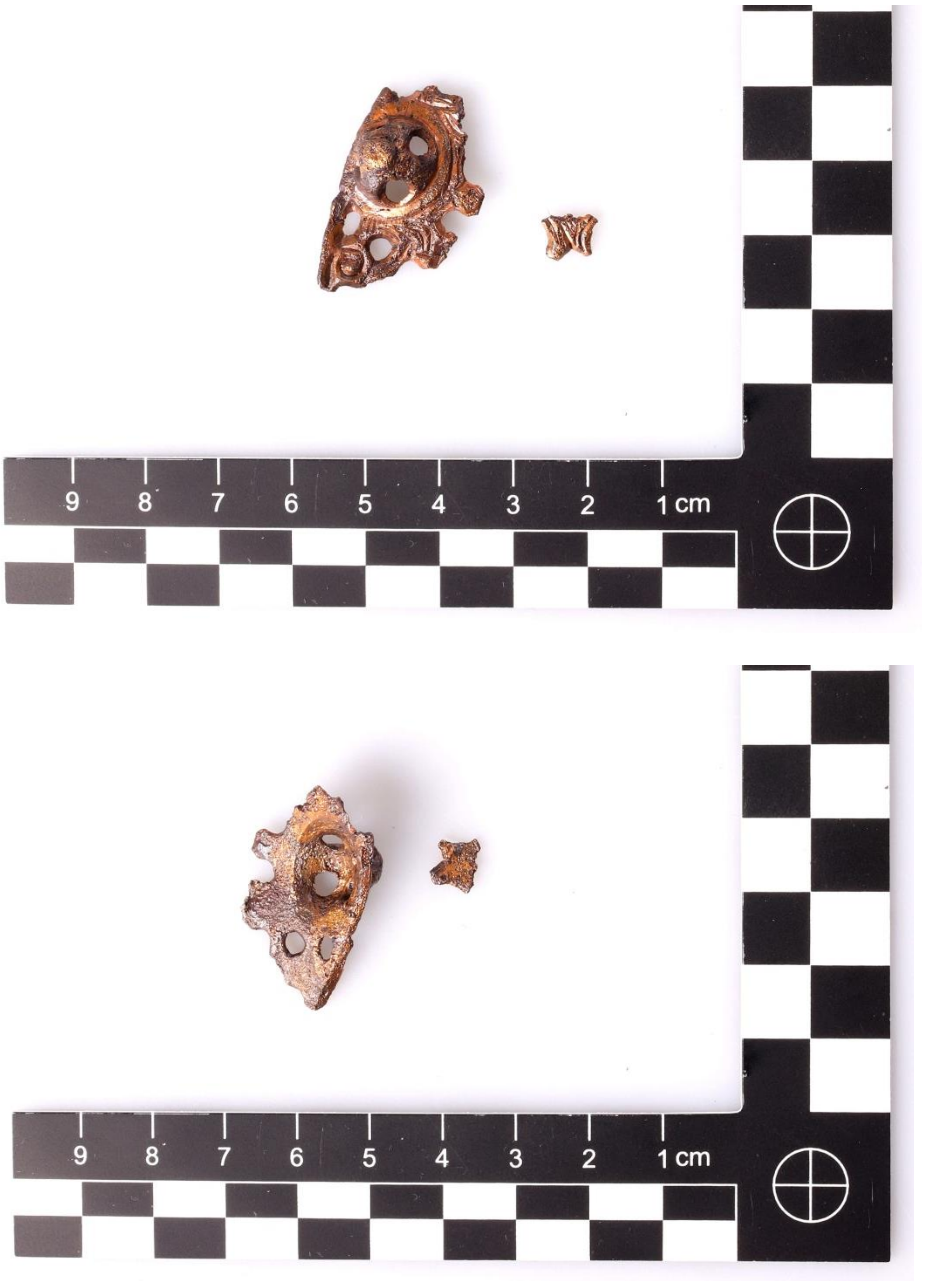


Figure 70. Tortoise brooch, find no. 119 - after conservation

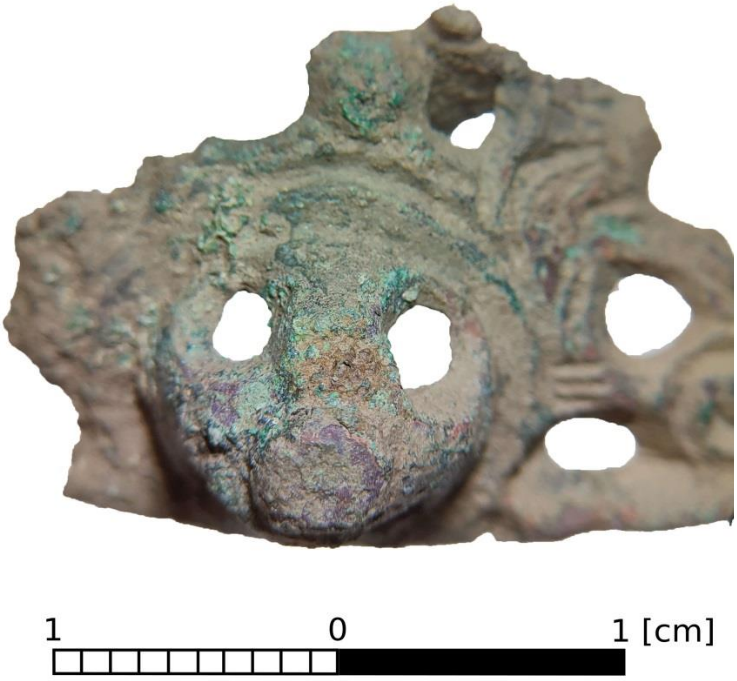


Figure 71. Tortoise brooch, find no. 119 - before conservation - close up

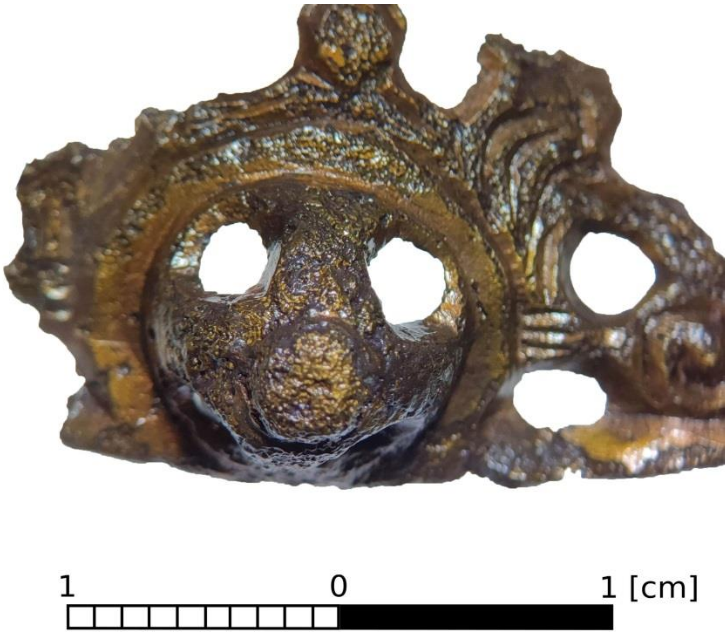


Figure 72. Tortoise brooch, find no. 119 - after conservation - close up

7.19. Key, find no. 120

Item	**Key**
Inv . No.	120
Site	Aska West Cemetery 2020
Dimensions [cm]	length: 5.36 x (section:) 0.90 x 0.58
Weight [g]	14,108
Raw material	Cu alloy
Procedure	no. 1

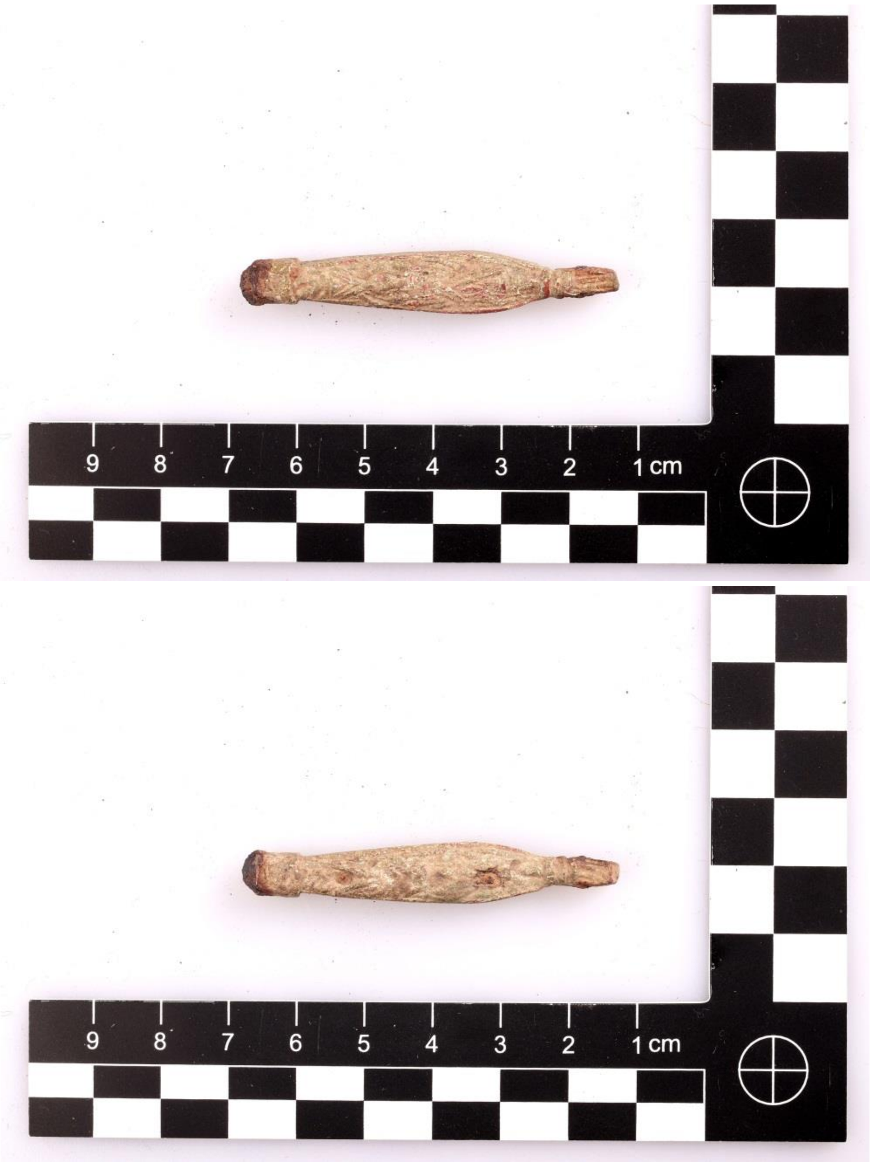


Figure 73. Key, find no. 120 - before conservation

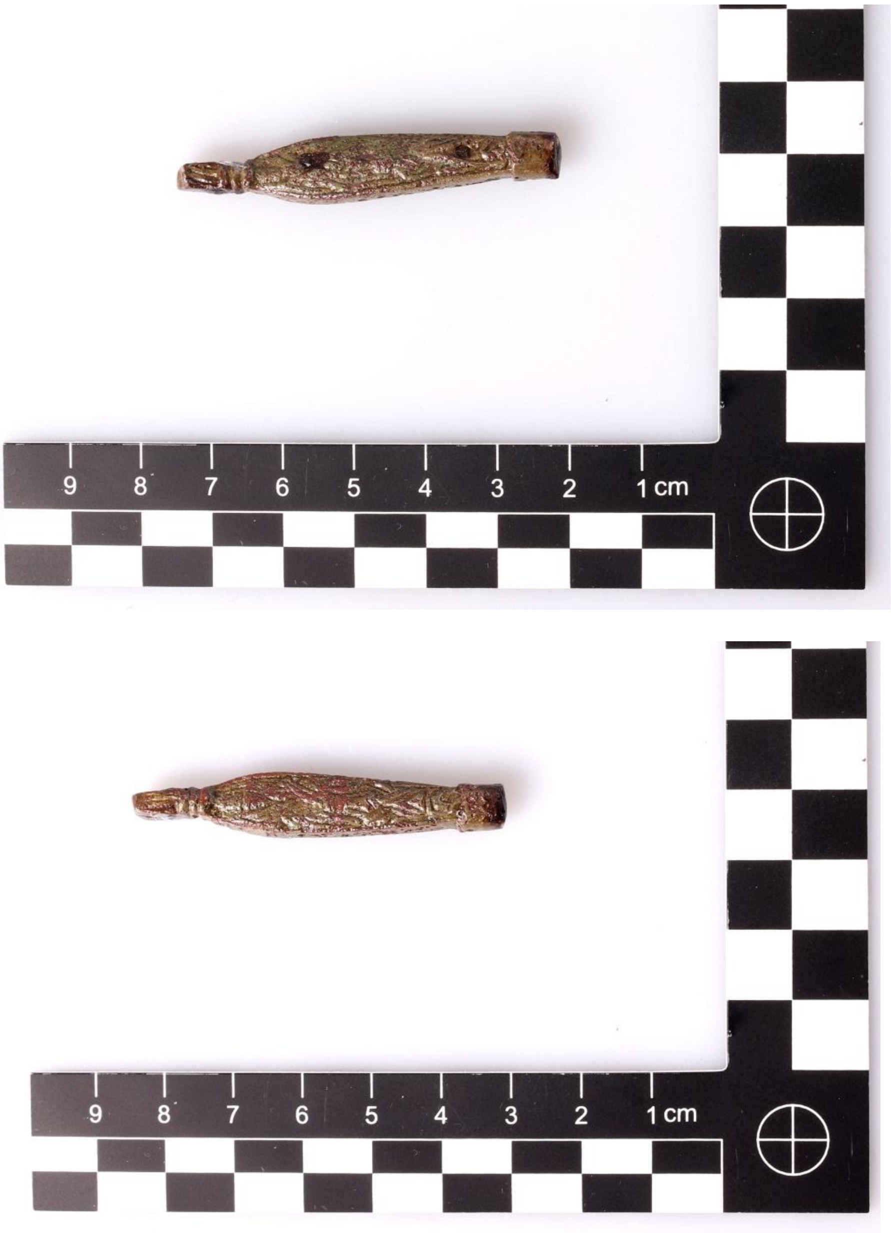


Figure 74. Key, find no. 120 - after conservation

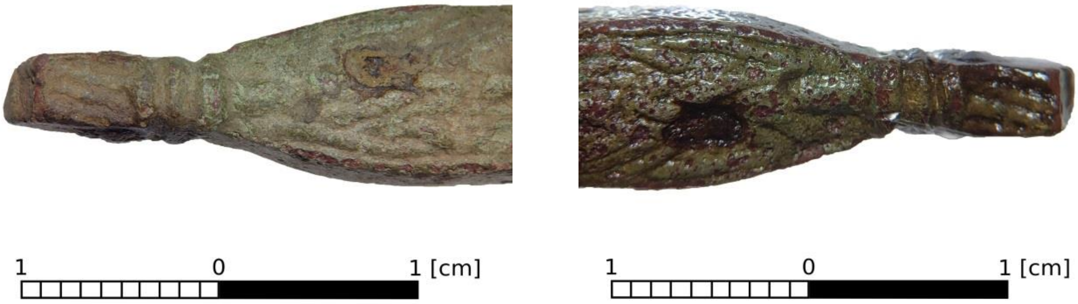


Figure 75. Key, find no. 120 - before and after conservation - close up

7.20. Tortoise brooch, find no. 121

Item	Tortoise brooch
Inv . No.	121
Site	Aska West Cemetery 2020
Dimensions [cm]	2,86 x 2,18 x 0,14
Weight [g]	2,322
Raw material	Cu alloy
Procedure	no. 1

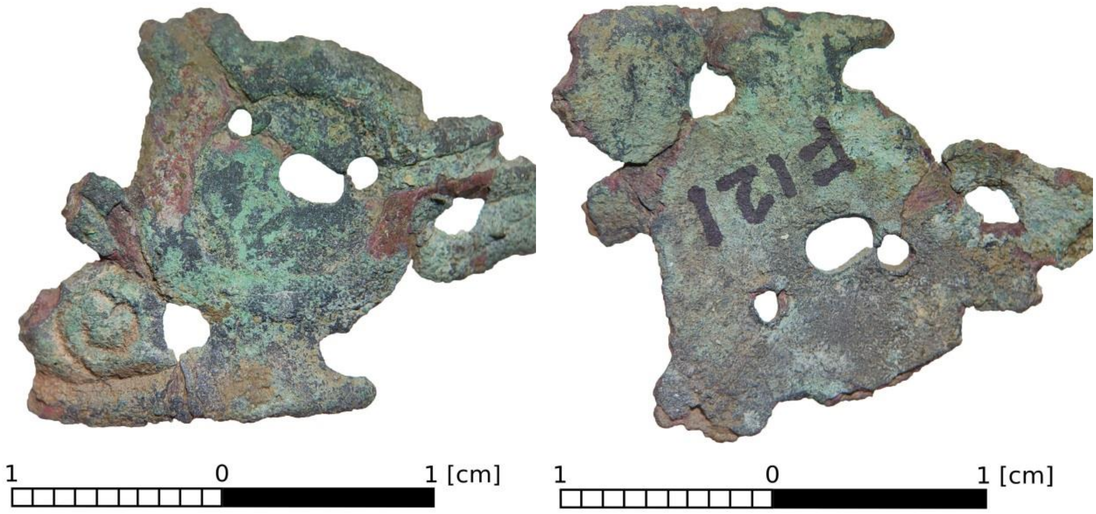


Figure 76. Tortoise brooch, find no. 121 - before conservation

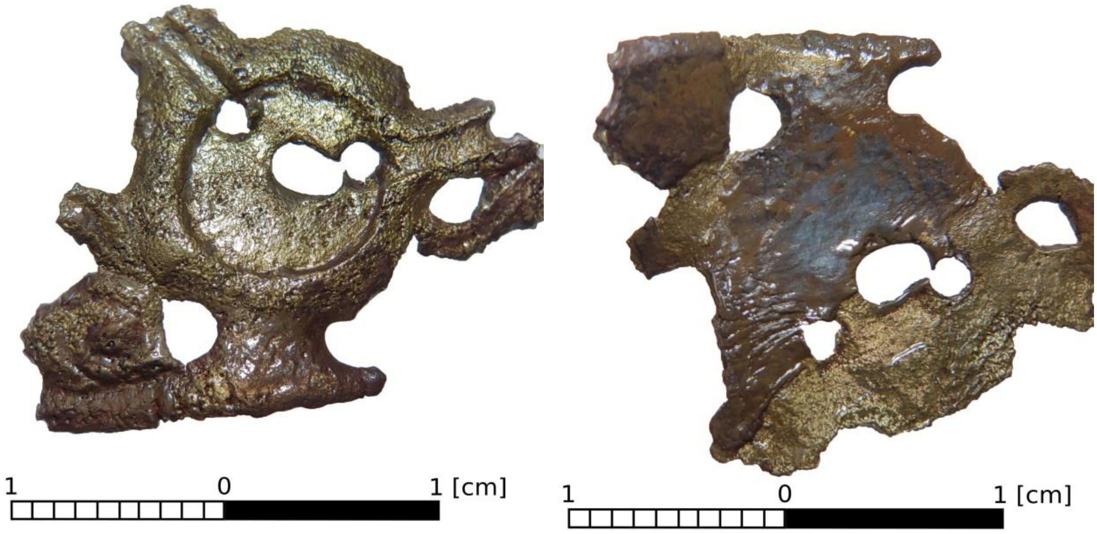


Figure 77. Tortoise brooch, find no. 121 - after conservation

7.21. Tortoise brooch, find no. 122

Item	Tortoise brooch
Inv . No.	122
Site	Aska West Cemetery 2020
Dimensions [cm]	3,10 x 2,32 x 0,14
Weight [g]	5,228
Raw material	Cu alloy
Procedure	no. 1

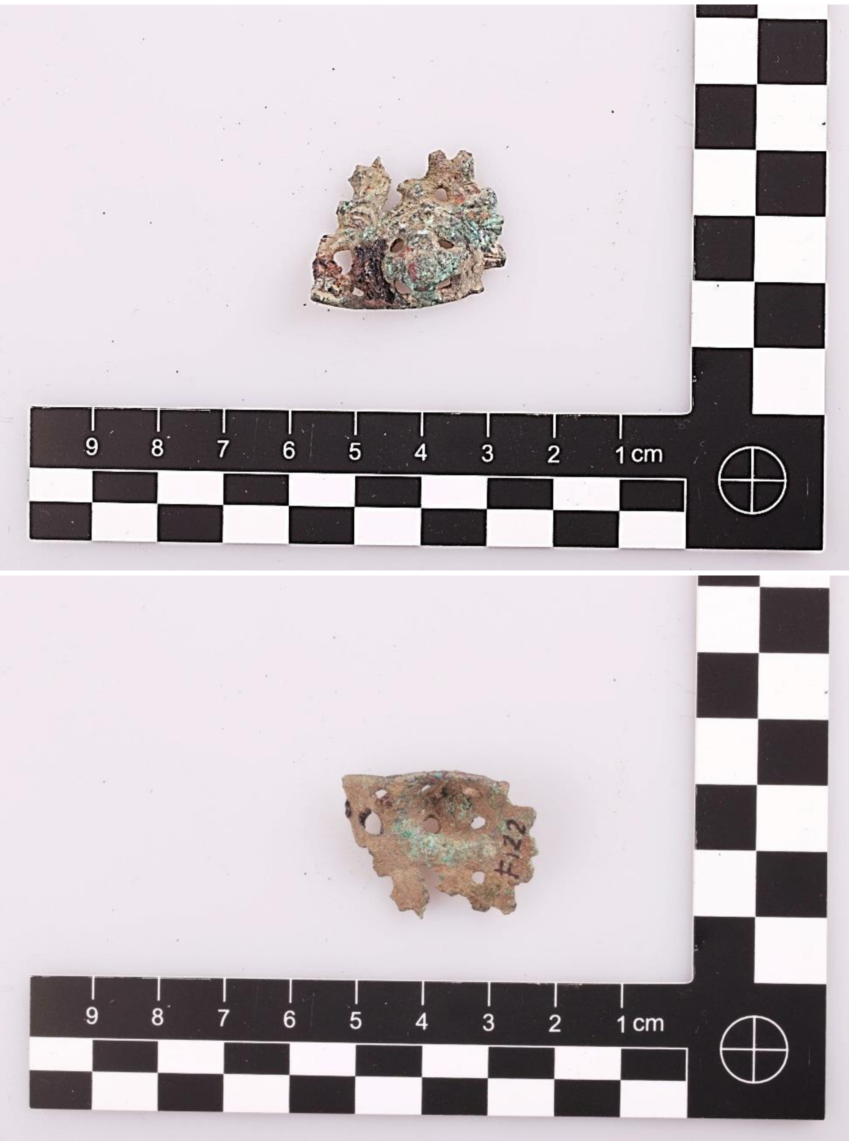


Figure 78. Tortoise brooch, find no. 122 - before conservation

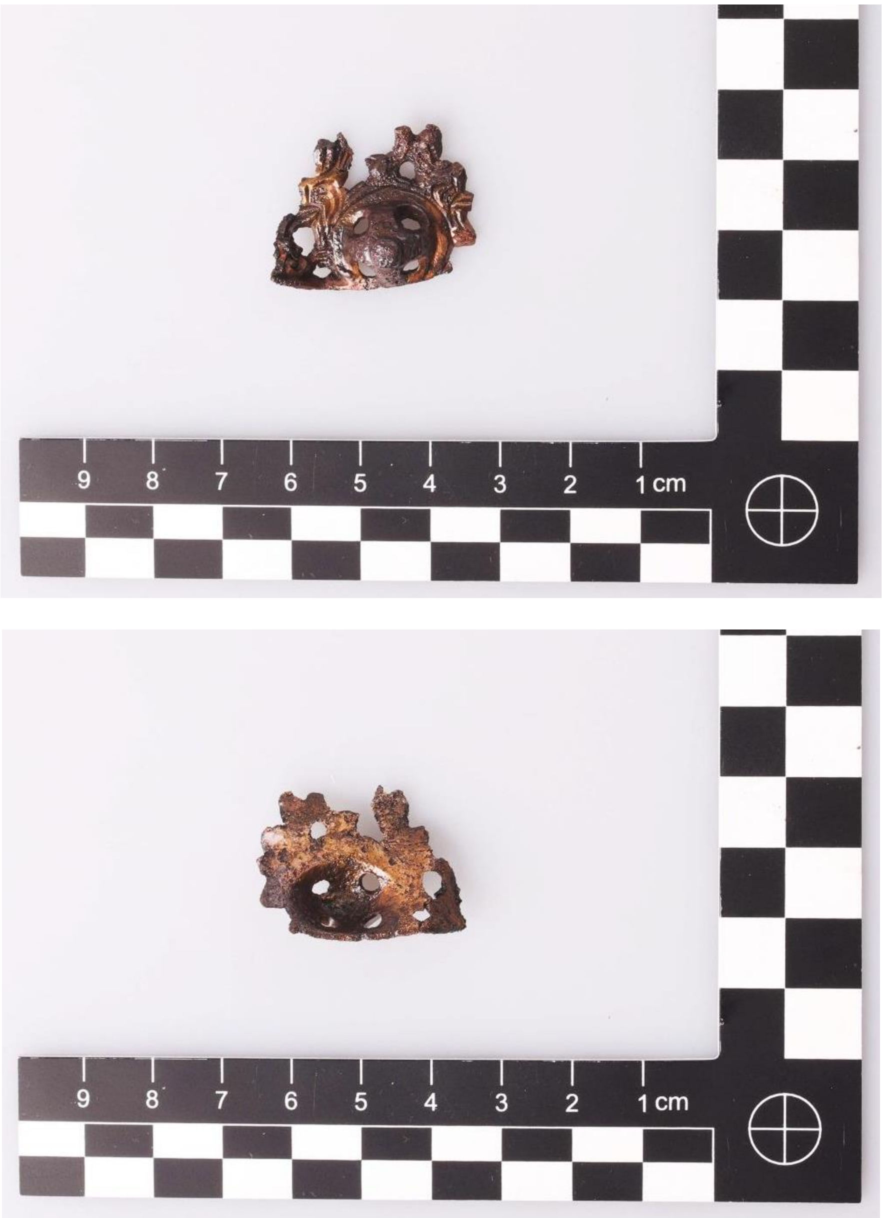


Figure 79. Tortoise brooch, find no. 122 - after conservation

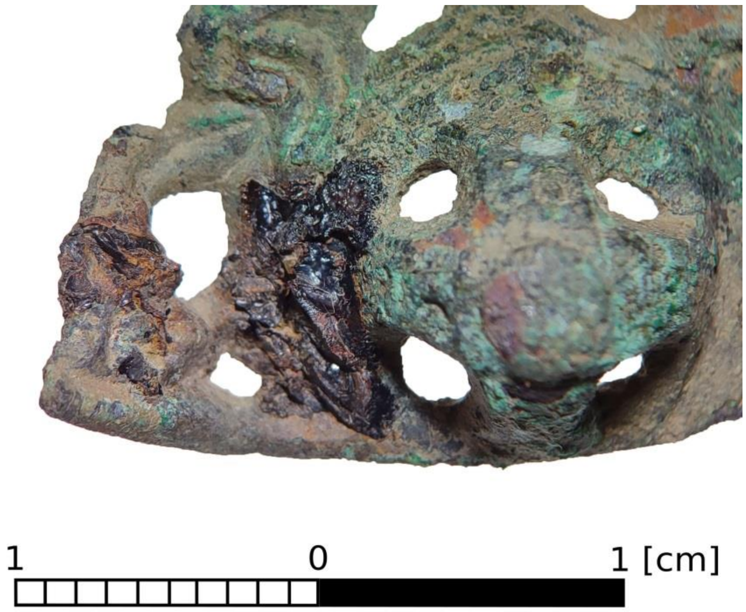


Figure 80. Tortoise brooch, find no. 122 - before conservation

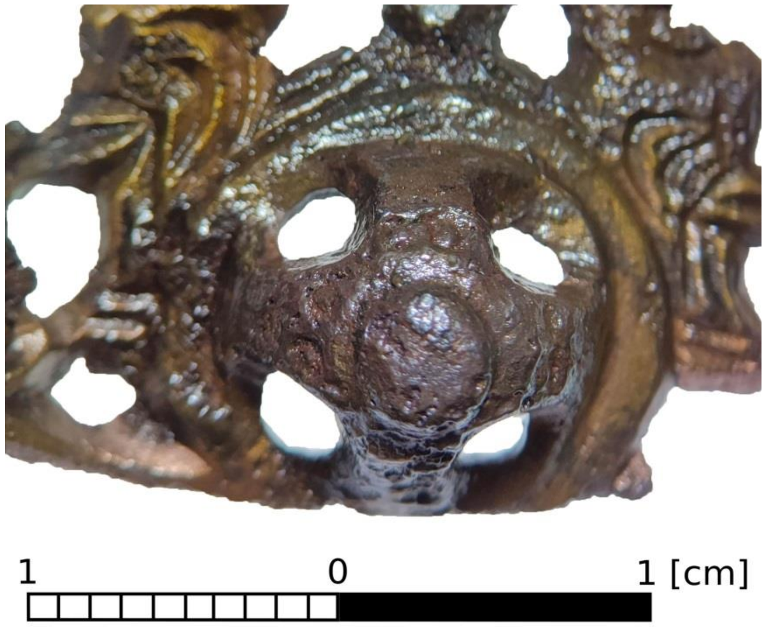


Figure 81. Tortoise brooch, find no. 122 - after conservation

7.22. Hook, find no. 123

Item	**Hook**
Inv . No.	123
Site	Aska West Cemetery 2020
Dimensions [cm]	length 2.82; width 1.72; thickness 0.12
Weight [g]	1,441
Raw material	Cu alloy, Au alloy
Procedure	no. 1, 2

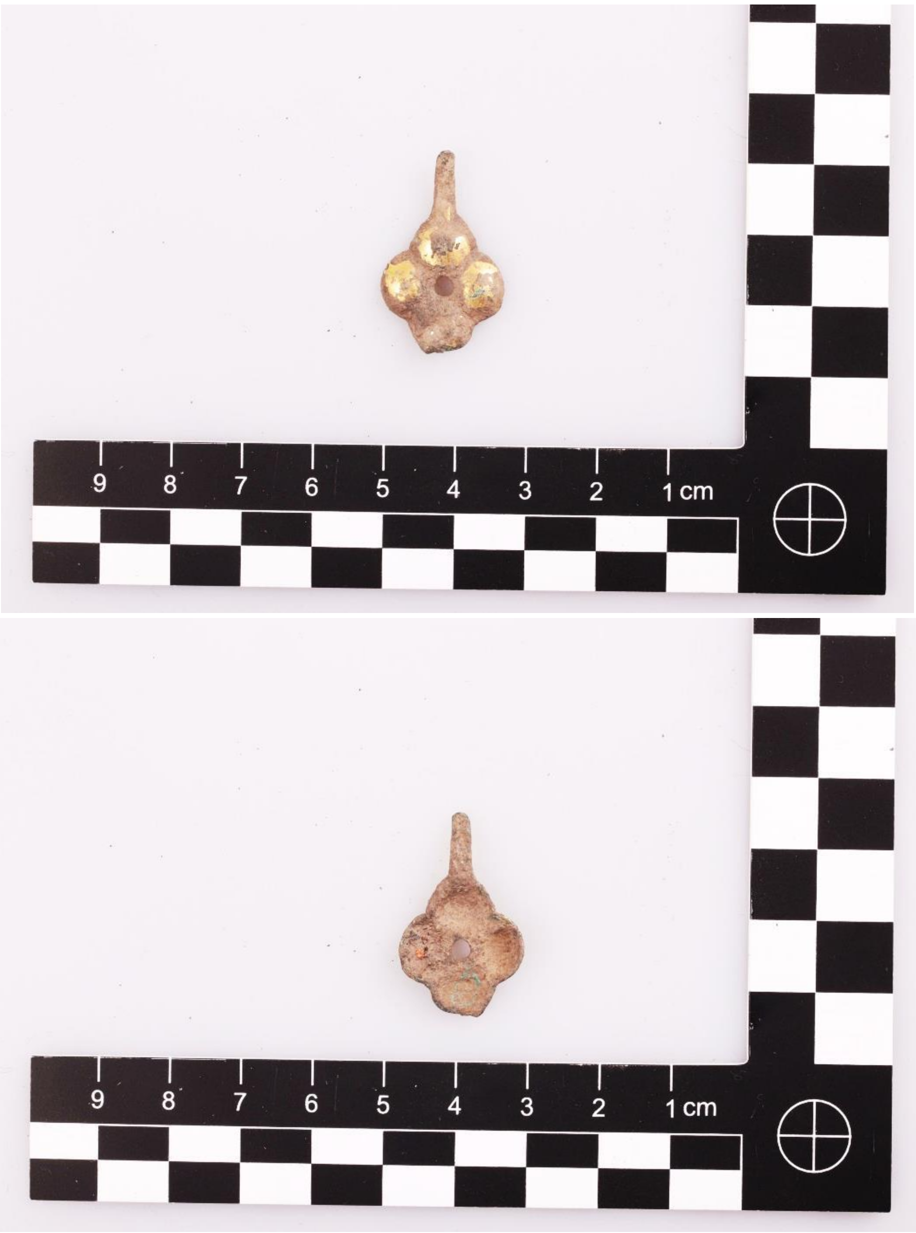


Figure 82. Hook, find no. 123 - before conservation

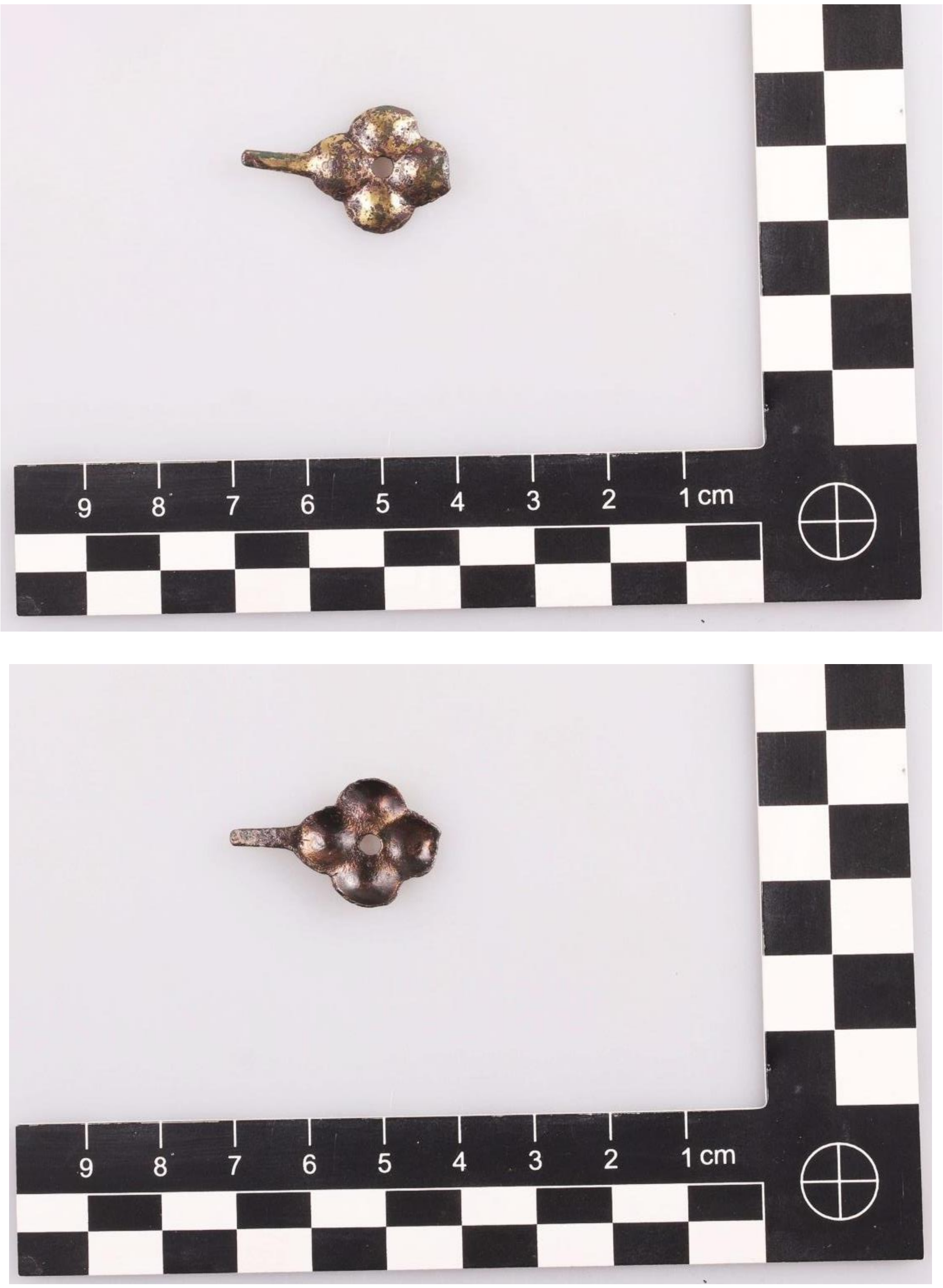


Figure 83. Hook, find no. 123 - after conservation

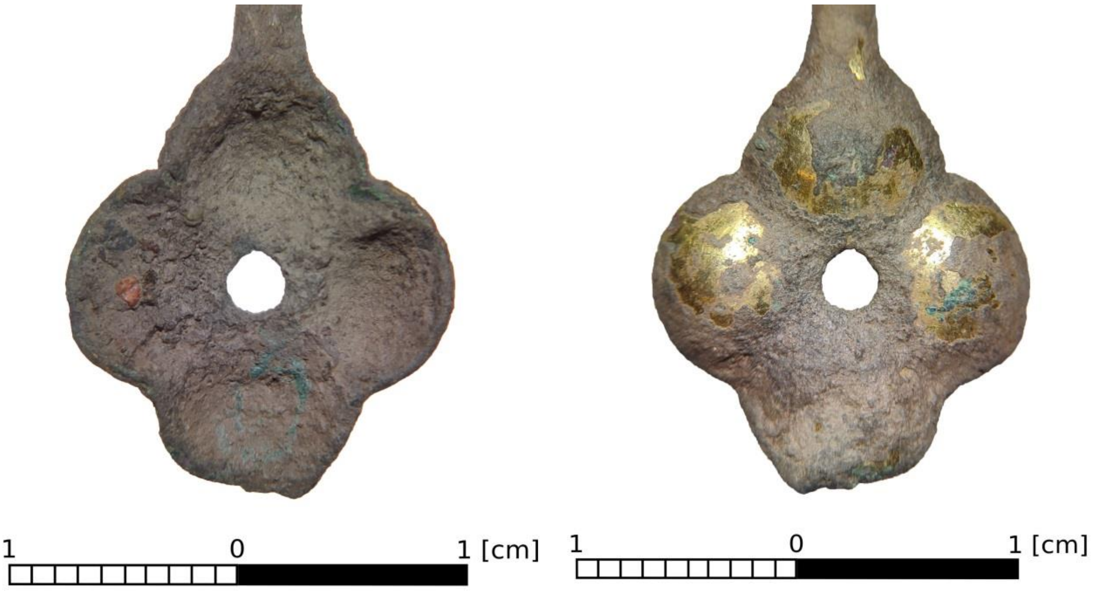


Figure 84. Hook, find no. 123 - before conservation - close up

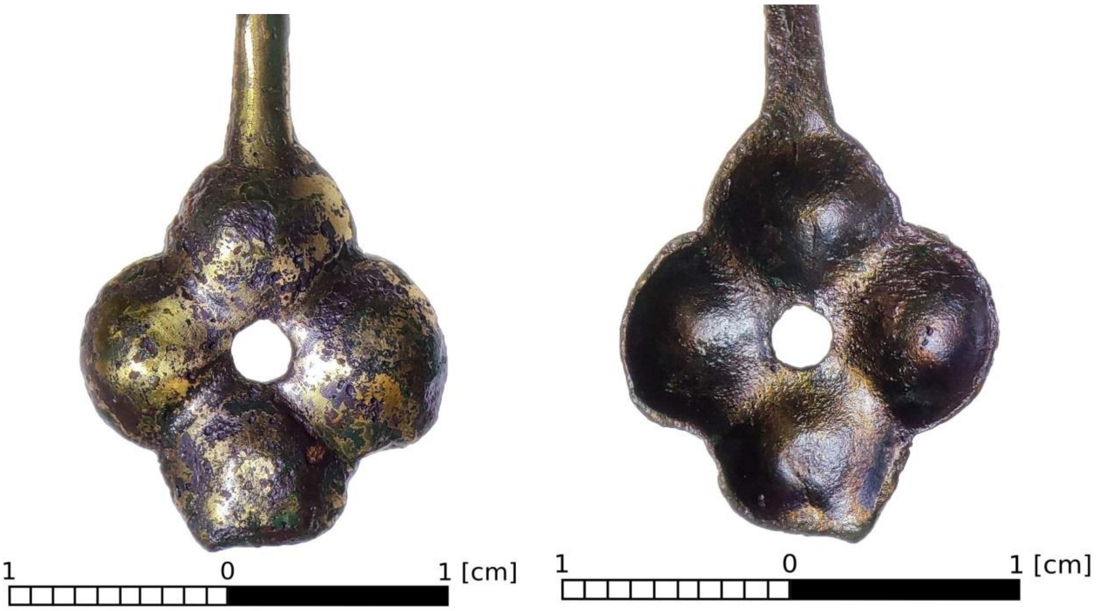
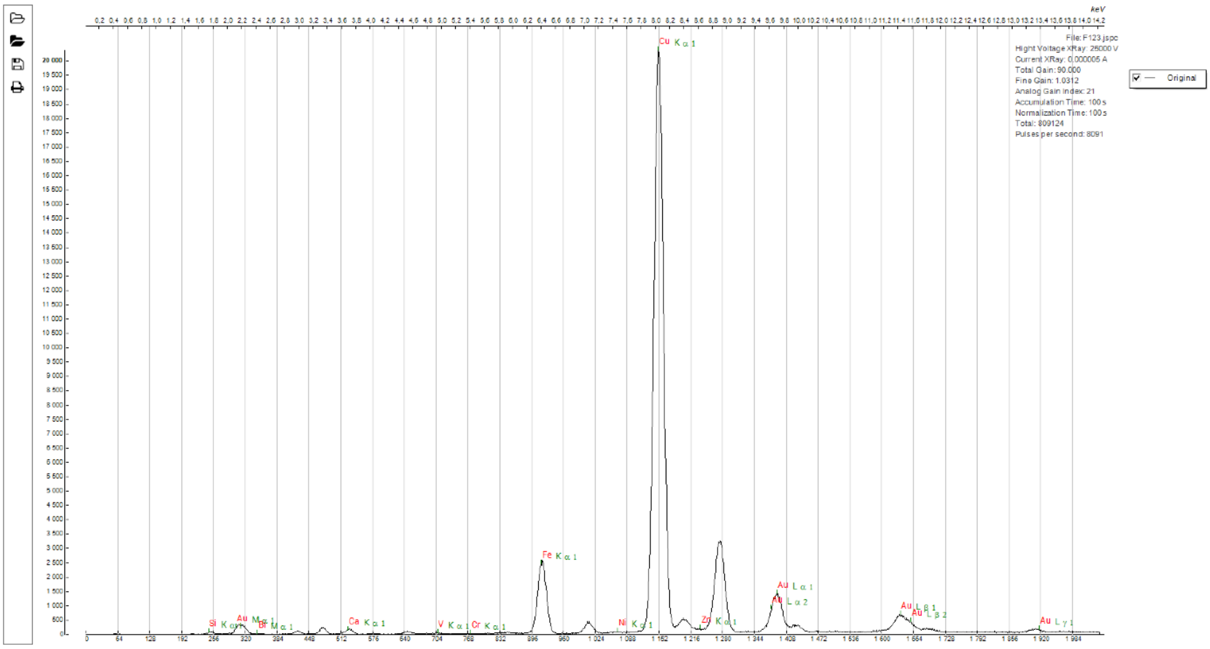


Figure 85. Hook, find no. 123 - after conservation - close up



File: F123.jspc
Hight Voltage XRay: 25000 V
Current XRay: 0.000005 A
Total Gain: 90.000
Fine Gain: 1.0312
Analog Gain Index: 21
Accumulation Time: 100 s
Normalization Time: 100 s
Total: 809124
Pulses per second: 8091

Figure 86. Hook, find no. 123 - spectrogram

7.23. Tortoise brooch, find no. 124

Item	Tortoise brooch
Inv . No.	124
Site	Aska West Cemetery 2020
Dimensions [cm]	1.48 x 1.46 x 1.52 (max. height) x 0.22
Weight [g]	8,611
Raw material	Cu alloy
Procedure	no. 1

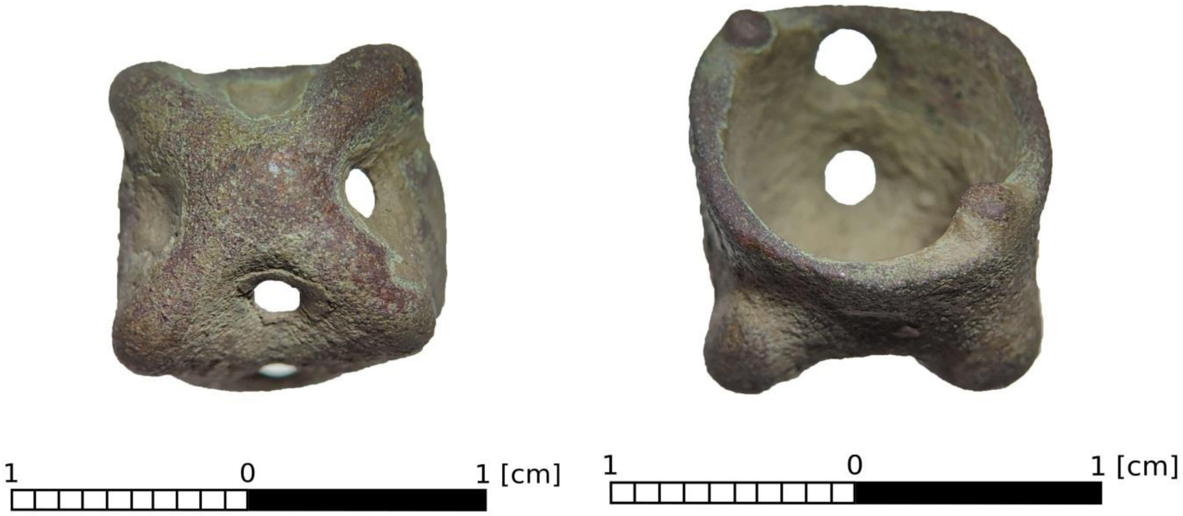


Figure 87. Tortoise brooch, find no. 124 - before conservation

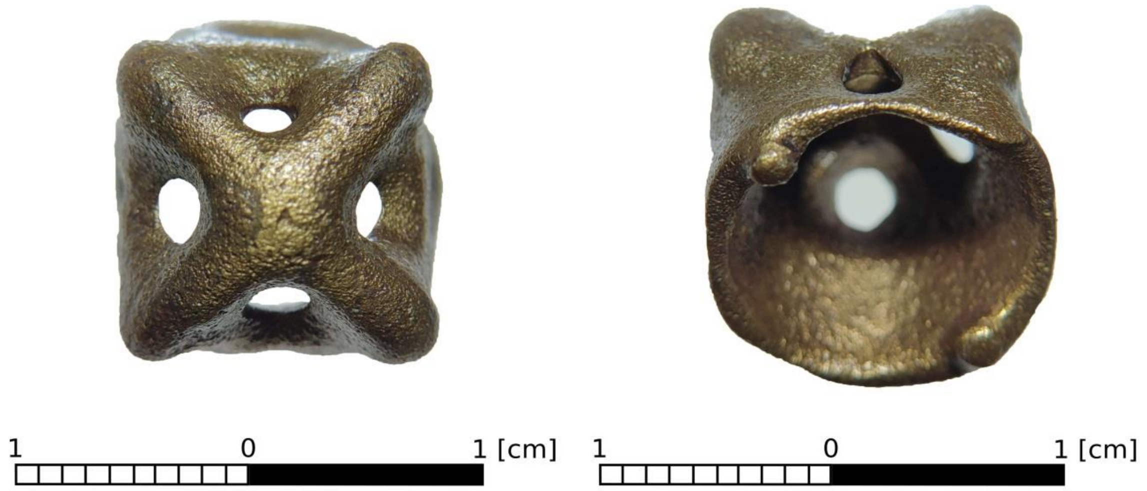


Figure 88. Tortoise brooch, find no. 124 - after conservation

7.24. Tortoise brooch, find no. 125

Item	**Tortoise brooch**
Inv . No.	125
Site	Aska West Cemetery 2020
Dimensions [cm]	2,22 x 1,38 x 1,03; 2,48 x 1,81 x 0,11; 0,94 x 0,54 x 1,03
Weight [g]	5,678
Raw material	Cu alloy
Procedure	no. 1

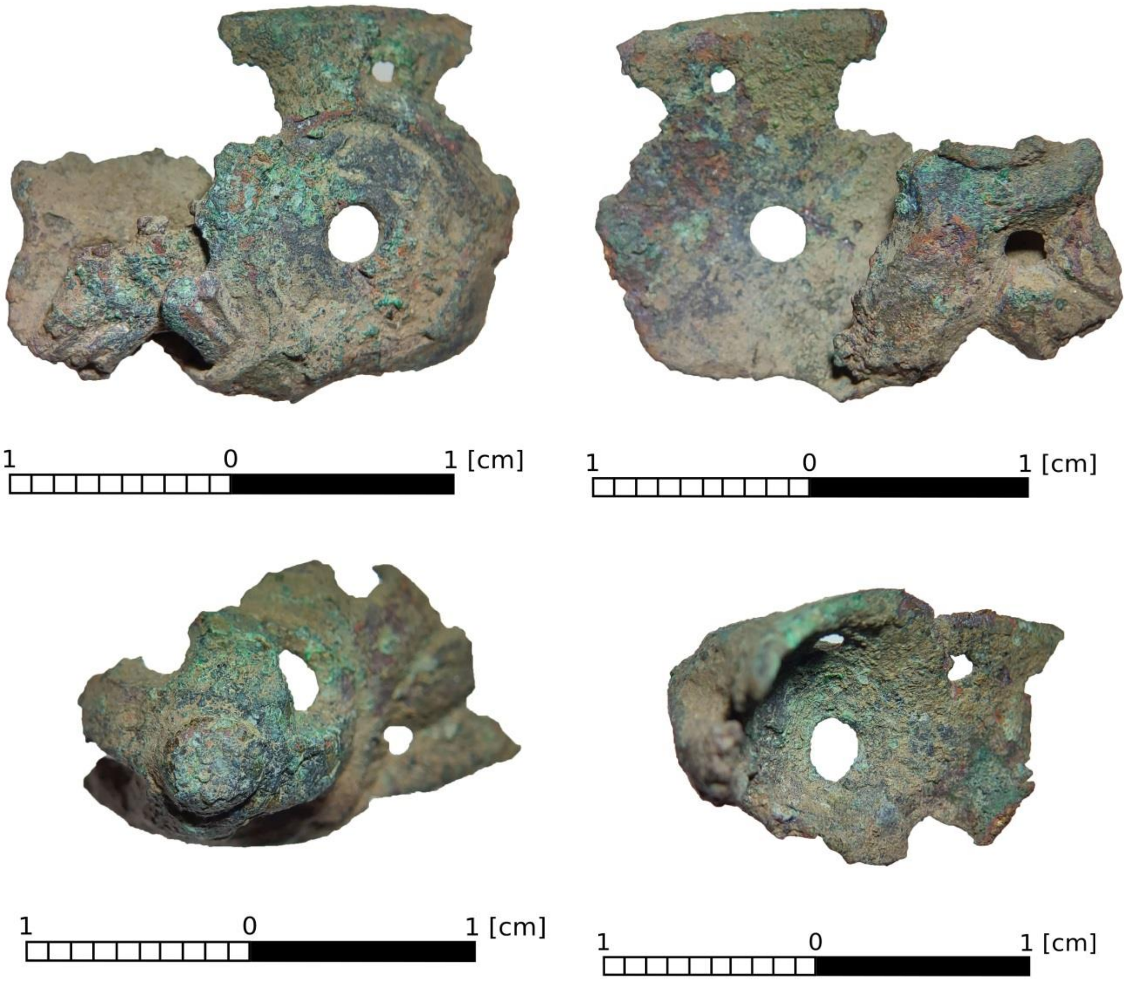


Figure 89. Tortoise brooch, find no. 125 - before conservation

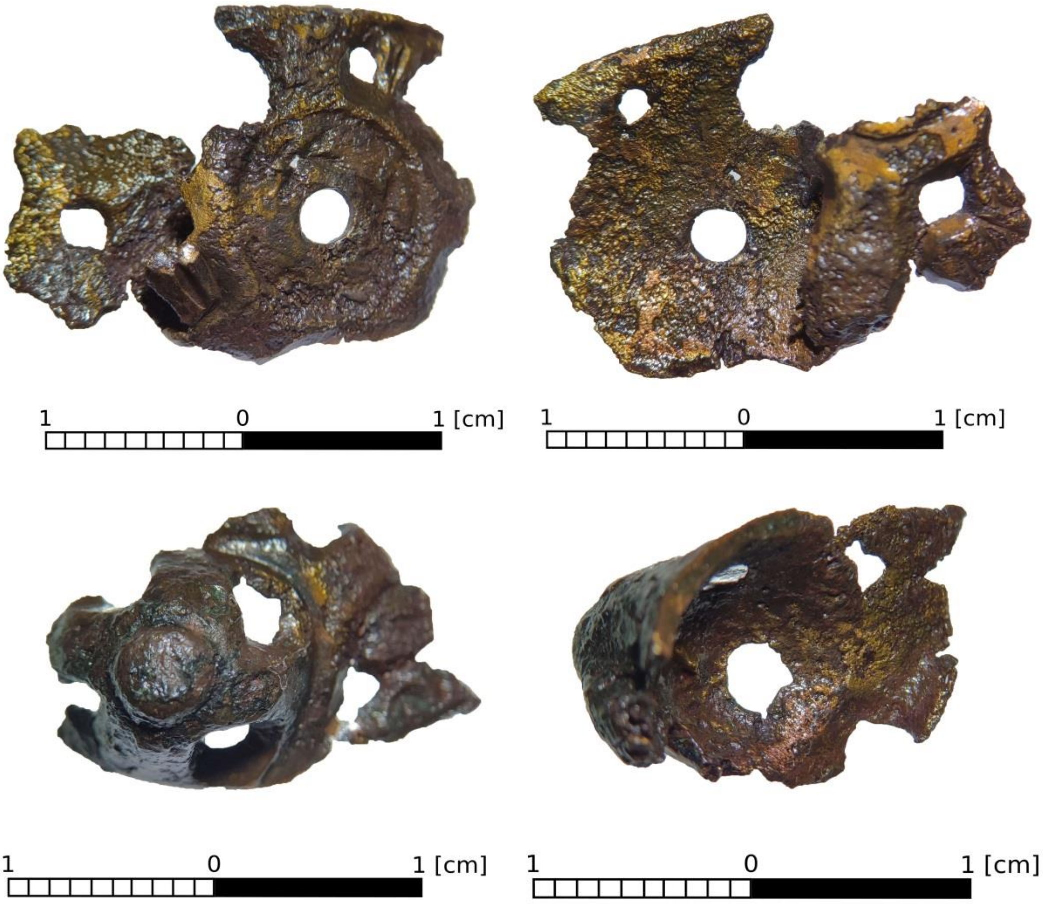


Figure 90. Tortoise brooch, find no. 125 - after conservation

7.25. Pendant, find no. 126

Item	Pendant
Inv . No.	126
Site	Aska West Cemetery 2020
Dimensions [cm]	1,21 x 0,81 x 0,13; 1,16 x 1,31 x 0,22; 0,54 x 0,46 x 0,14
Weight [g]	1,024
Raw material	Ag alloy
Procedure	no. 2

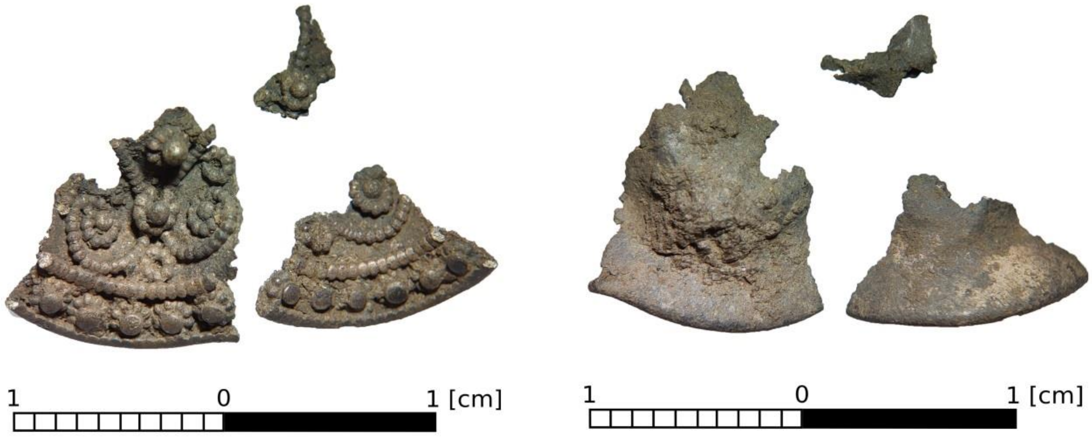


Figure 91. Pendant, find no. 126 - before conservation

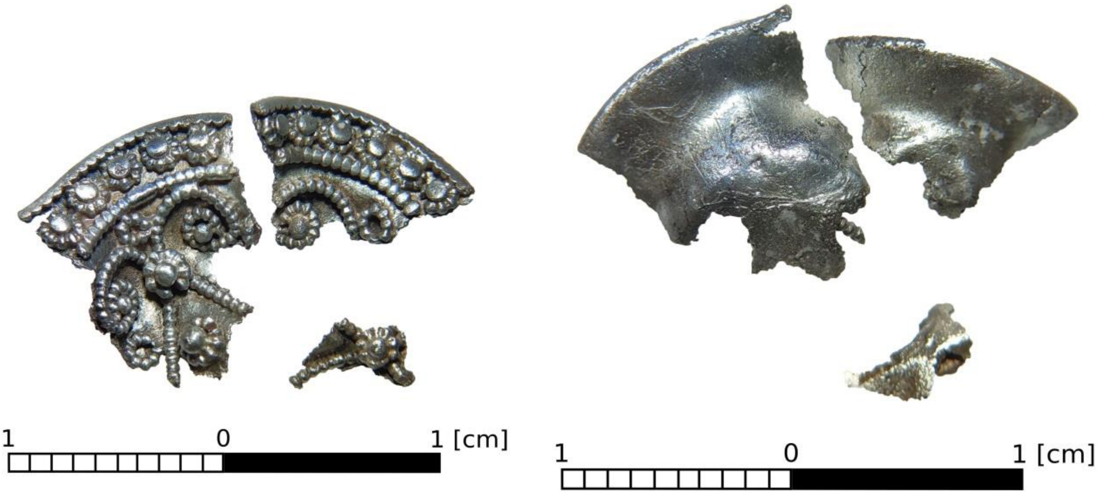


Figure 92. Pendant, find no. 126 - after conservation

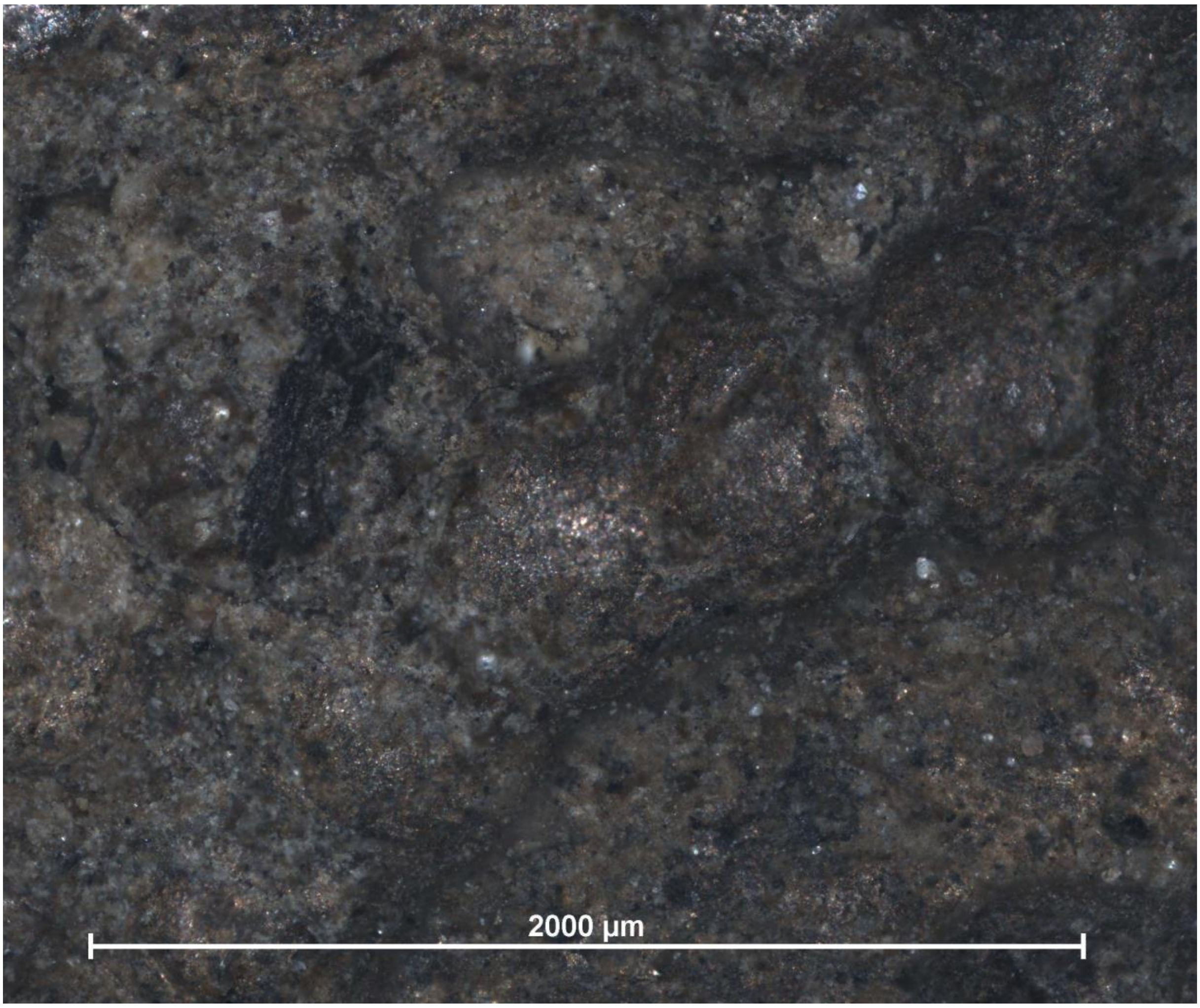


Figure 93. Pendant, find no. 126 - image from the Nikon Eclipse LV 150 N microscope

7.26. Fragment, find no. 127

Item	Fragment
Inv . No.	127
Site	Aska West Cemetery 2020
Dimensions [cm]	3,01 x 2,06 x 0,07
Weight [g]	2,097
Raw material	Cu alloy
Procedure	no. 1

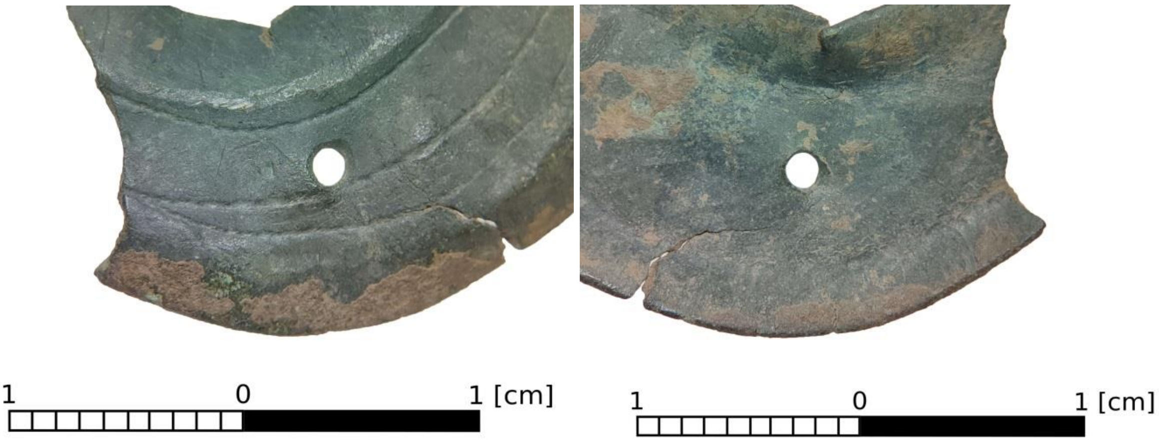


Figure 94. Fragment, find no. 127 - before conservation

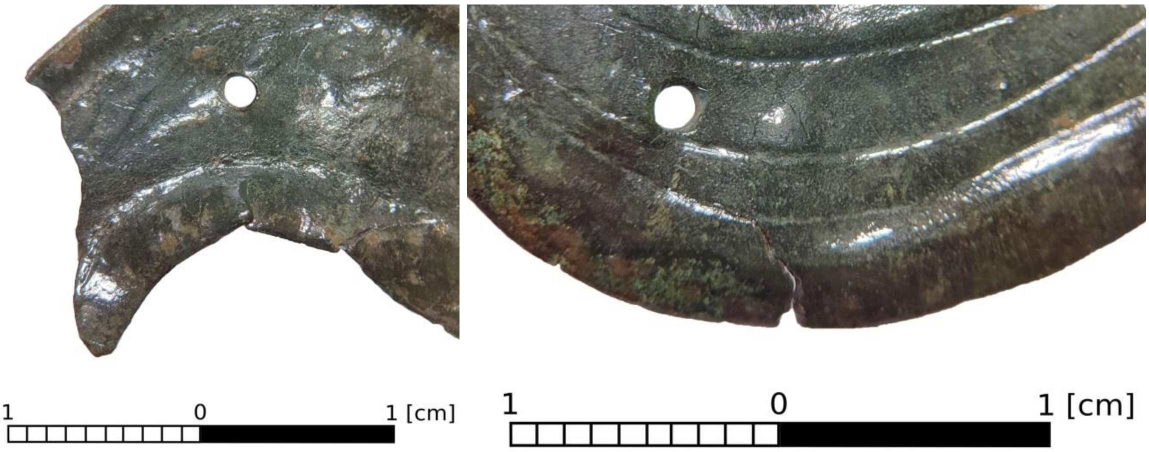


Figure 95. Fragment, find no. 127 - after conservation

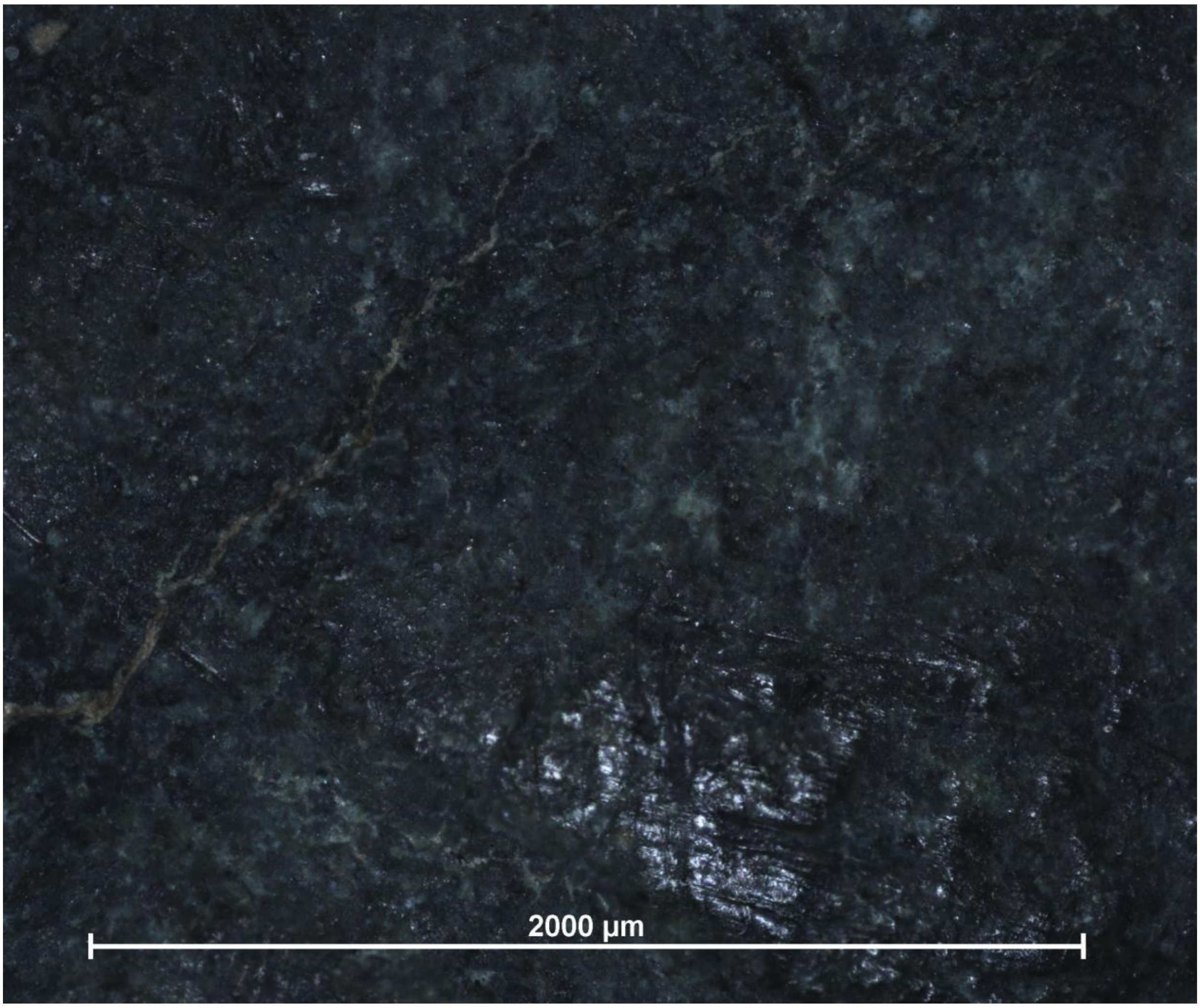


Figure 96. Fragment, find no. 127 - image from the Nikon Eclipse LV 150 N microscope

7.27. Brass pot fragment, find no. 128

Item	Brass pot fragment
Inv . No.	128
Site	Aska West Cemetery 2020
Dimensions [cm]	4,16 x 2,21 x 0,16/0,58
Weight [g]	16,813
Raw material	Cu alloy
Procedure	no. 1

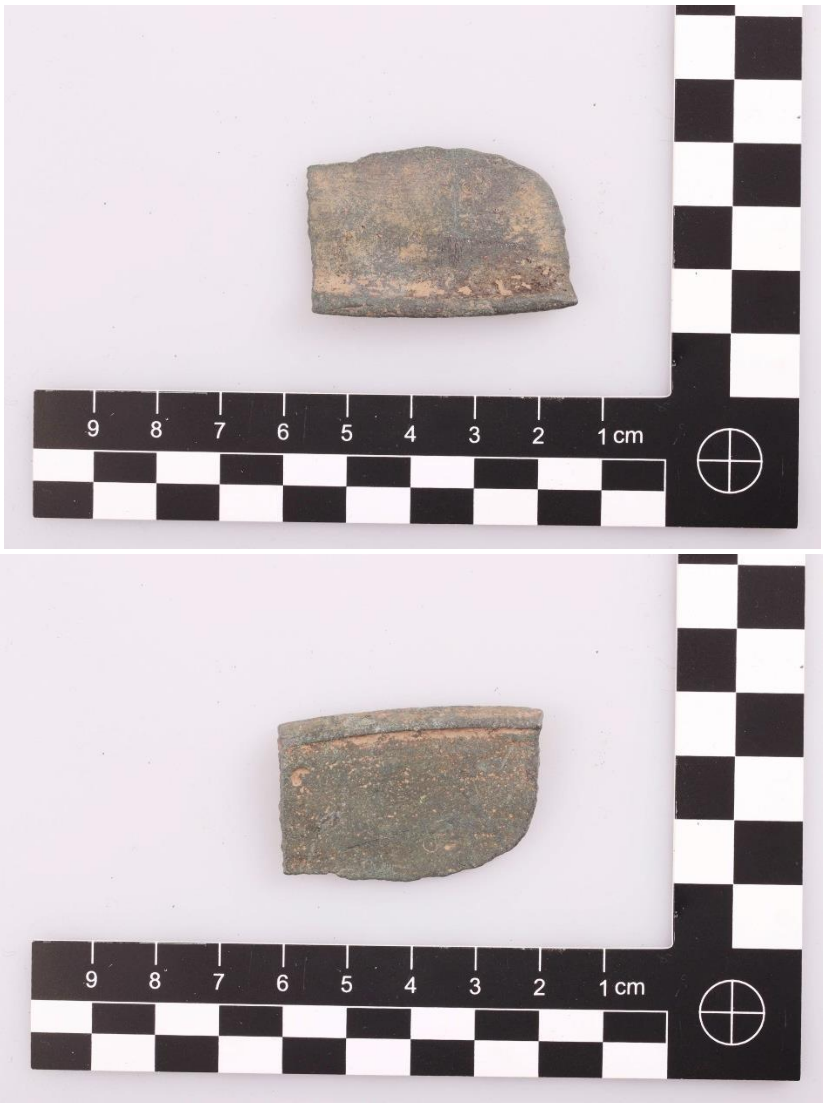


Figure 97. Brass pot fragment, find no. 128 - before conservation

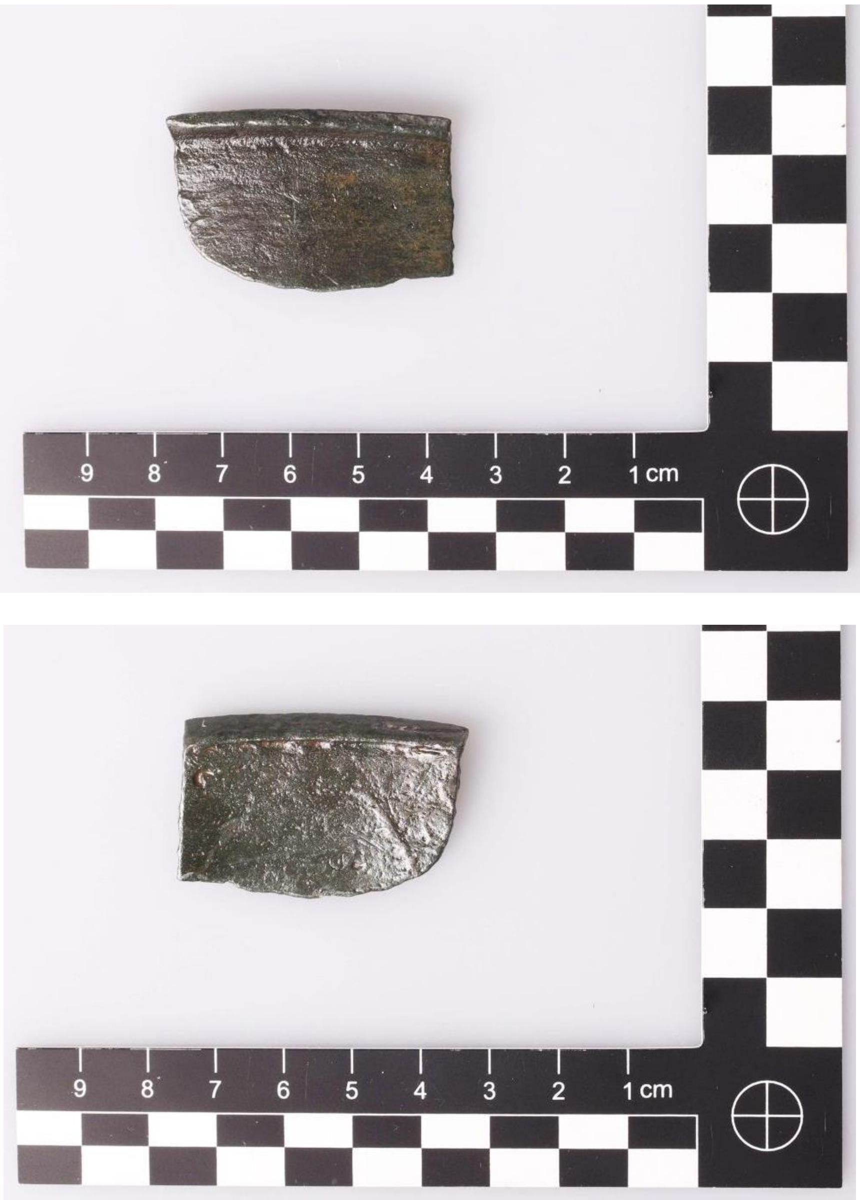


Figure 98. Brass pot fragment, find no. 128 - after conservation

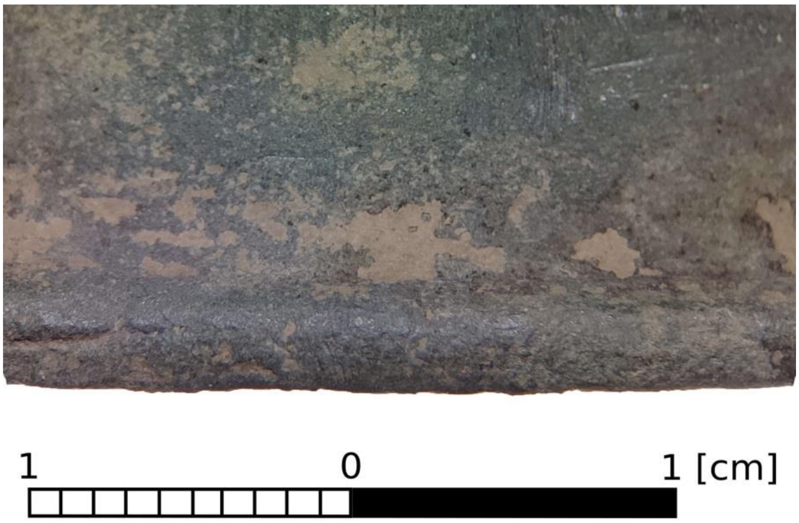


Figure 99. Brass pot fragment, find no. 128 - before conservation - close up

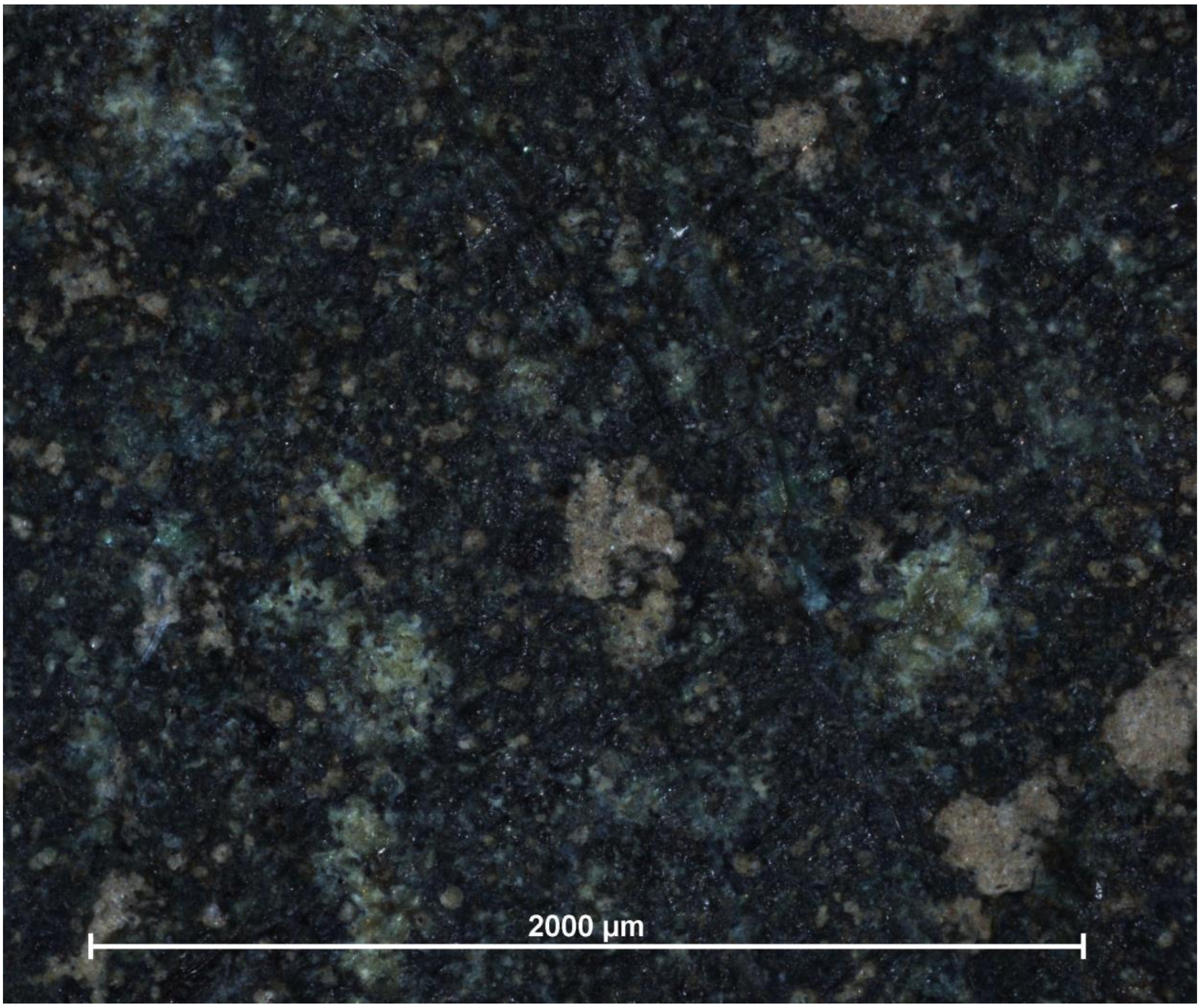


Figure 100. Brass pot fragment, find no. 128 - image from the Nikon Eclipse LV 150 N microscope

7.28. Eq-arm brooch, find no. 129

Item	**Eq-arm brooch**
Inv . No.	129
Site	Aska West Cemetery 2020
Dimensions [mm]	28,0 x 18,8 x 10,0
Weight [g]	6,96
Raw material	Cu alloy
Procedure	no. 1

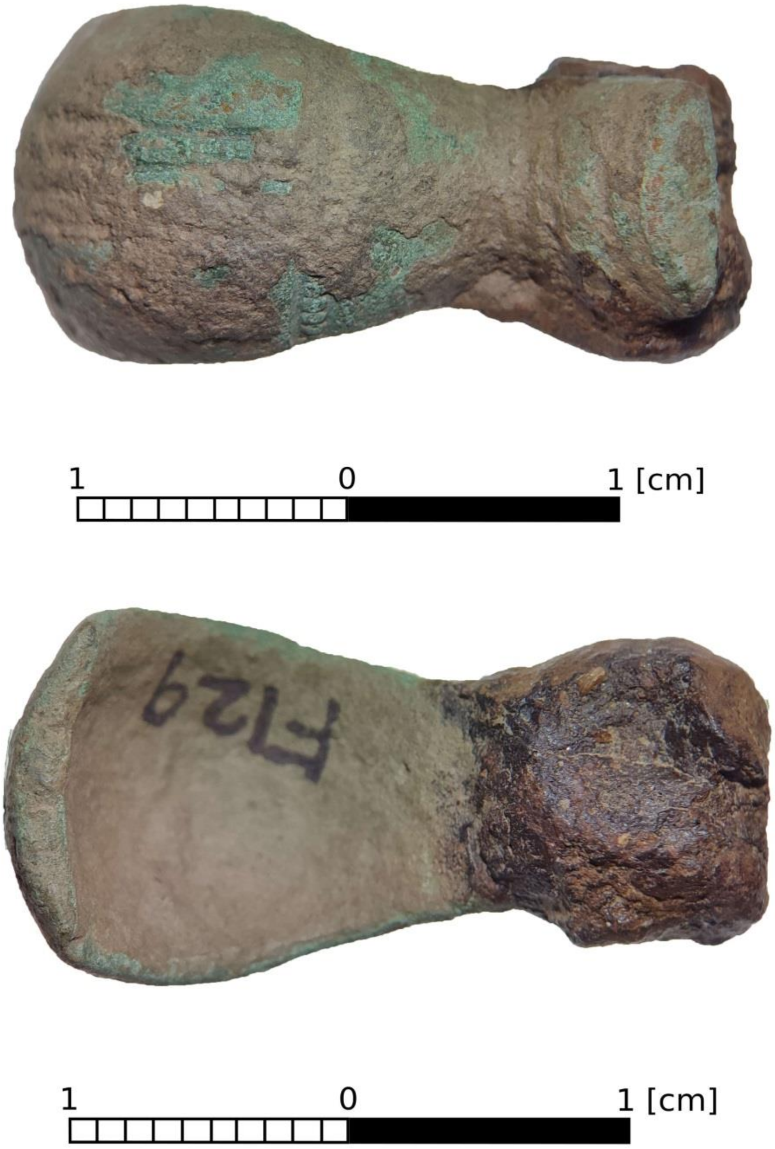


Figure 101. Eq-arm brooch, find no. 129 - before conservation

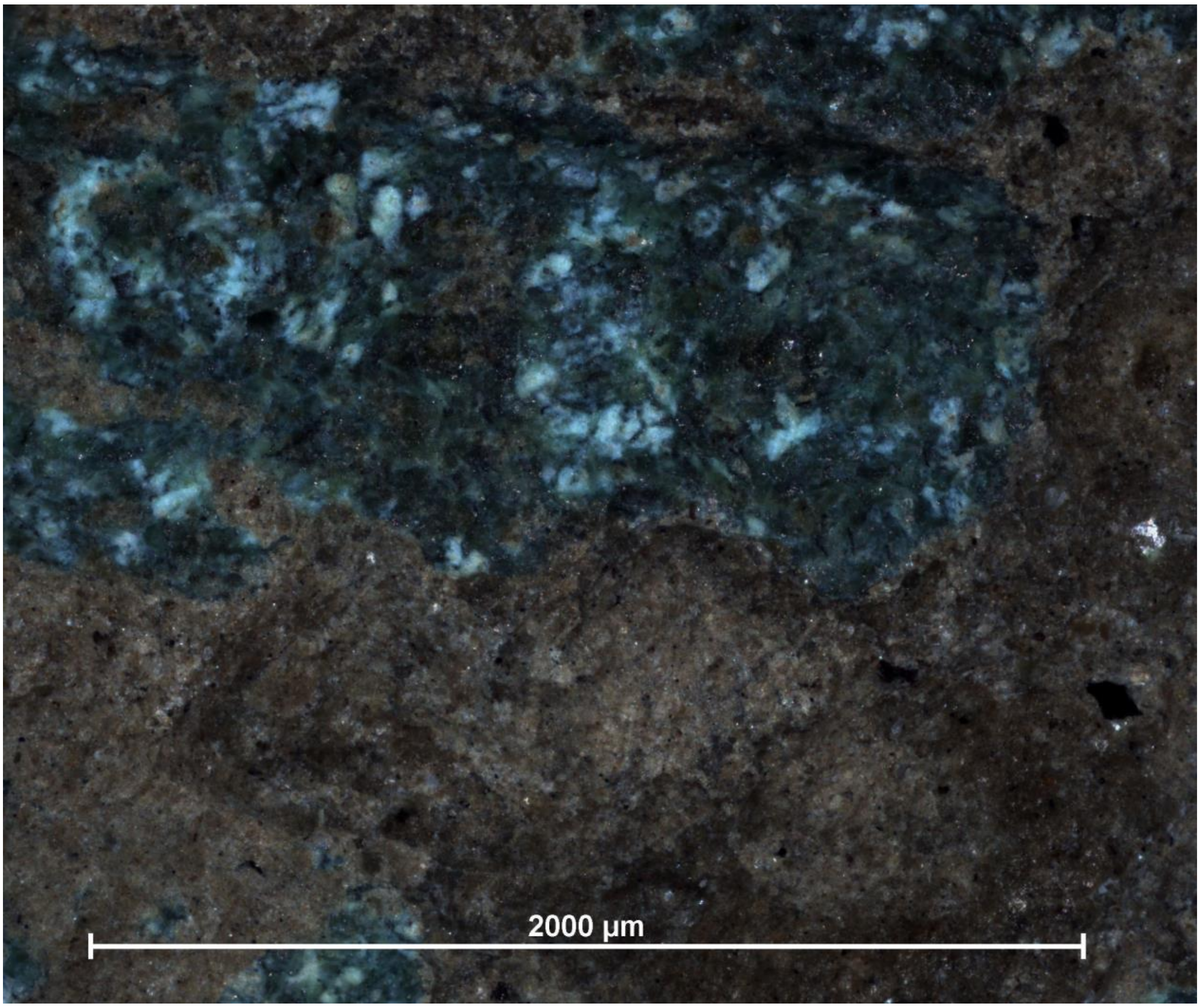


Figure 102. Eq-arm brooch, find no. 129 - image from the Nikon Eclipse LV 150 N microscope

7.29. Eq-arm brooch, find no. 130

Item	Eq-arm brooch
Inv . No.	130
Site	Aska West Cemetery 2020
Dimensions [cm]	2,62 x 1,38 x 0,13
Weight [g]	5,25
Raw material	Cu alloy
Procedure	no. 1

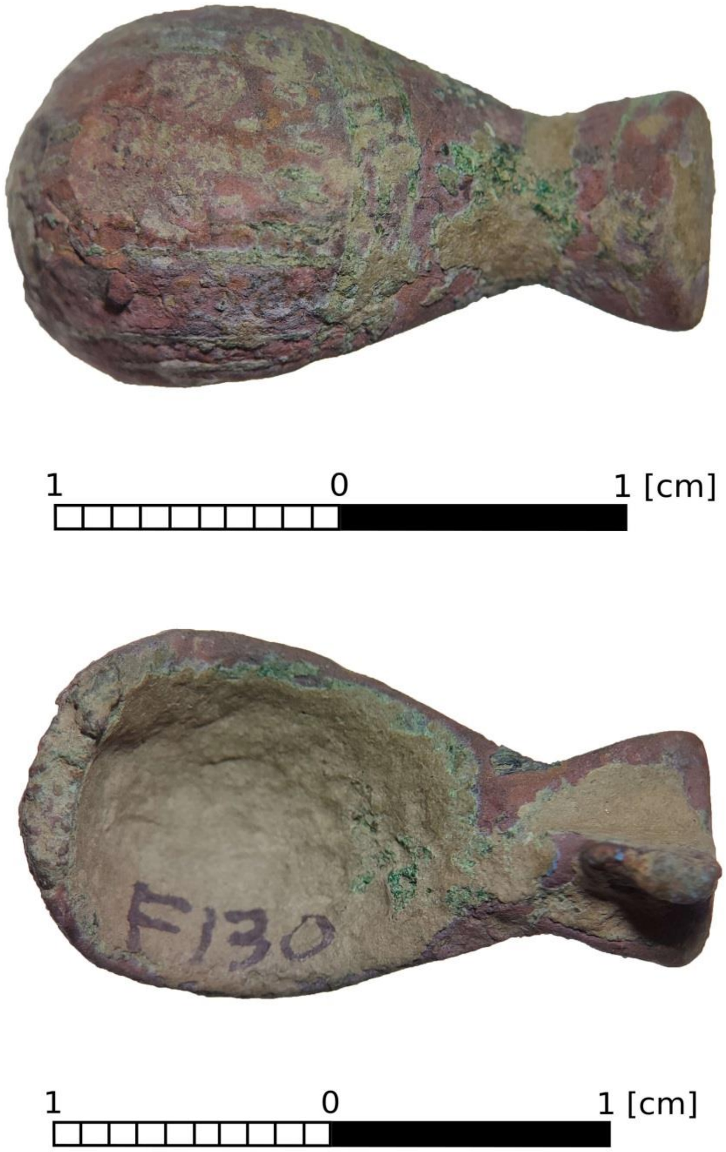


Figure 103. Eq-arm brooch, find no. 130 - before conservation

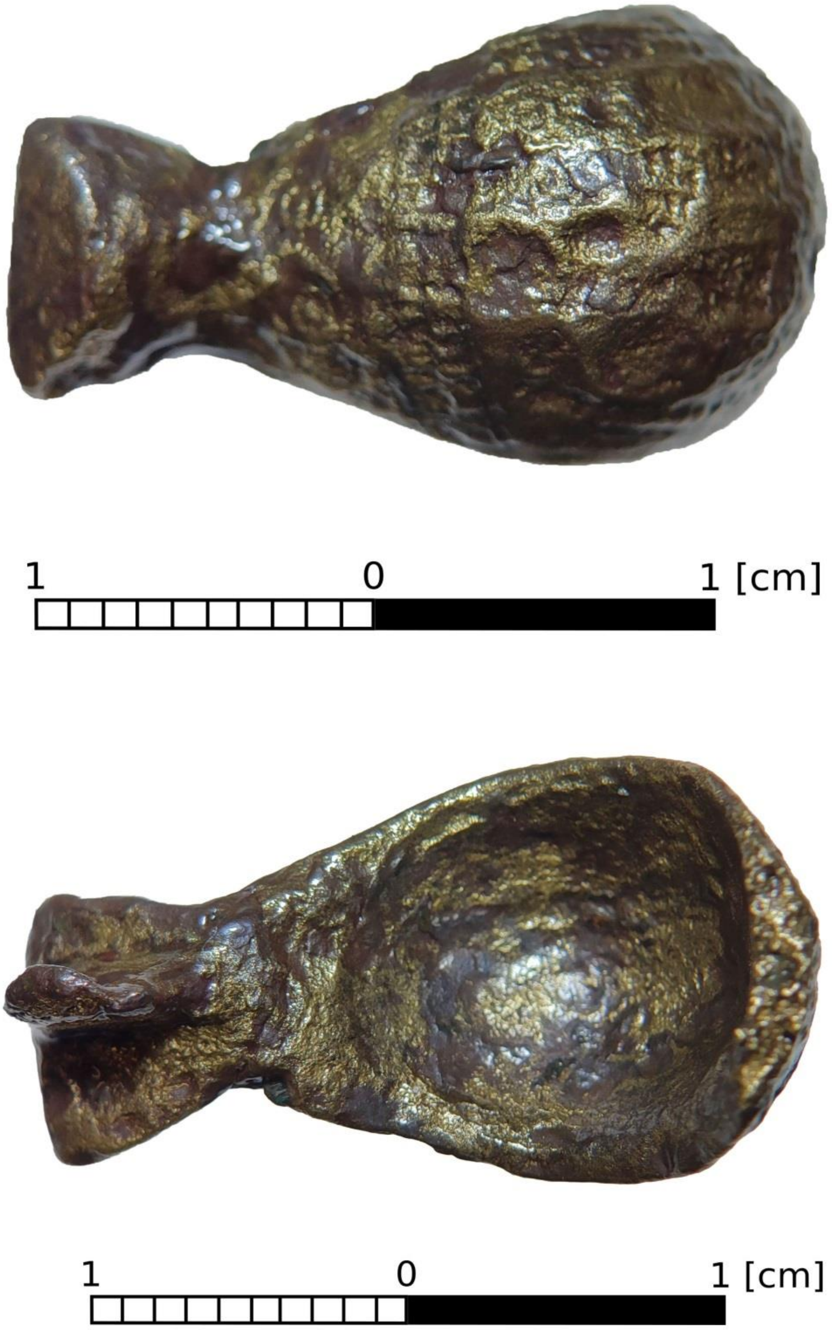


Figure 104. Eq-arm brooch, find no. 130 - after conservation

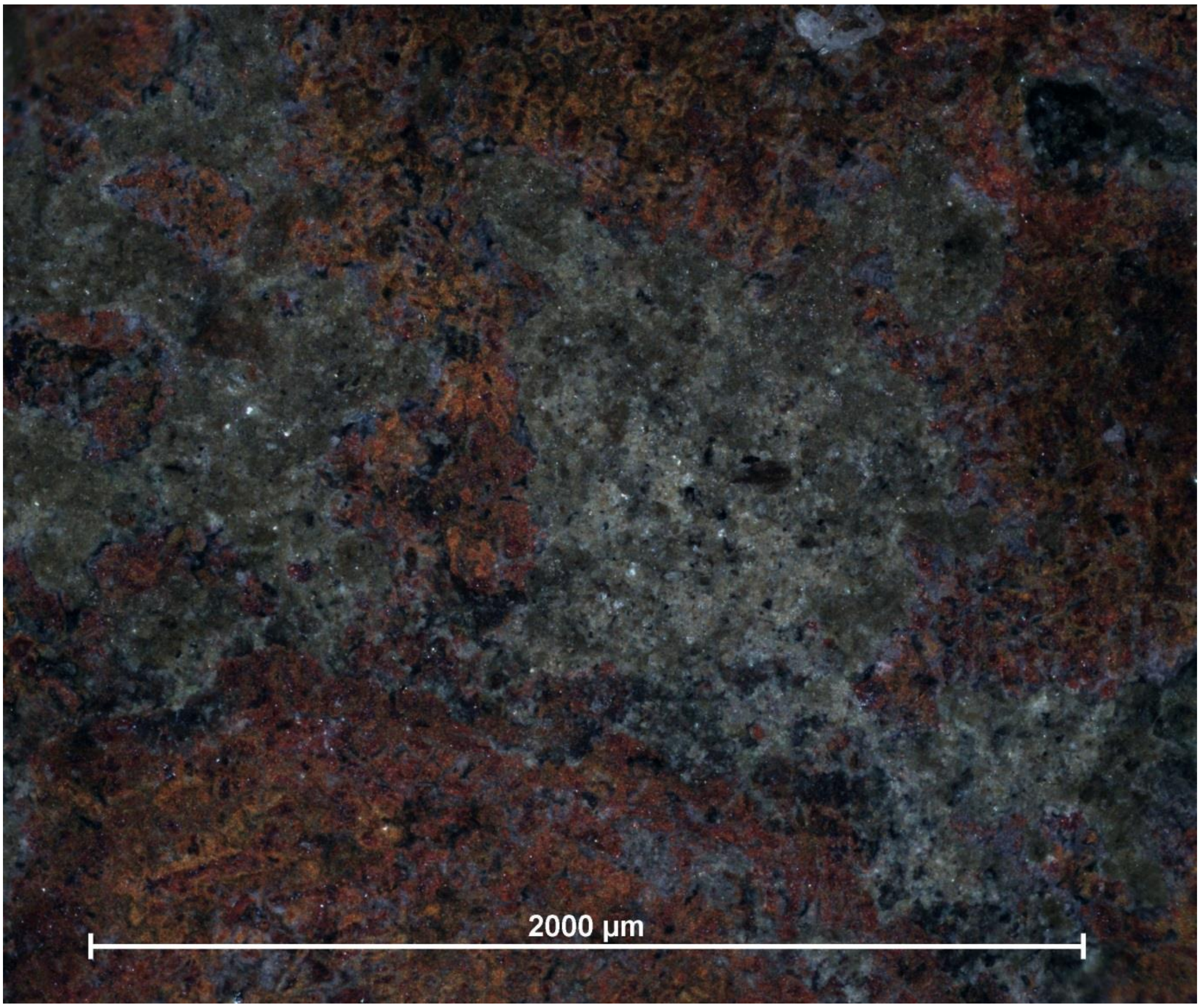


Figure 105. Eq-arm brooch, find no. 130 - image from the Nikon Eclipse LV 150 N microscope

7.30. Husby brooch, find no. 131

Item	**Husby brooch**
Inv . No.	131
Site	Aska West Cemetery 2020
Dimensions [mm]	19,6 x 21,6
Weight [g]	4,22 (2,94 +1,28)
Raw material	Cu + Fe alloy
Procedure	no. 1, 4

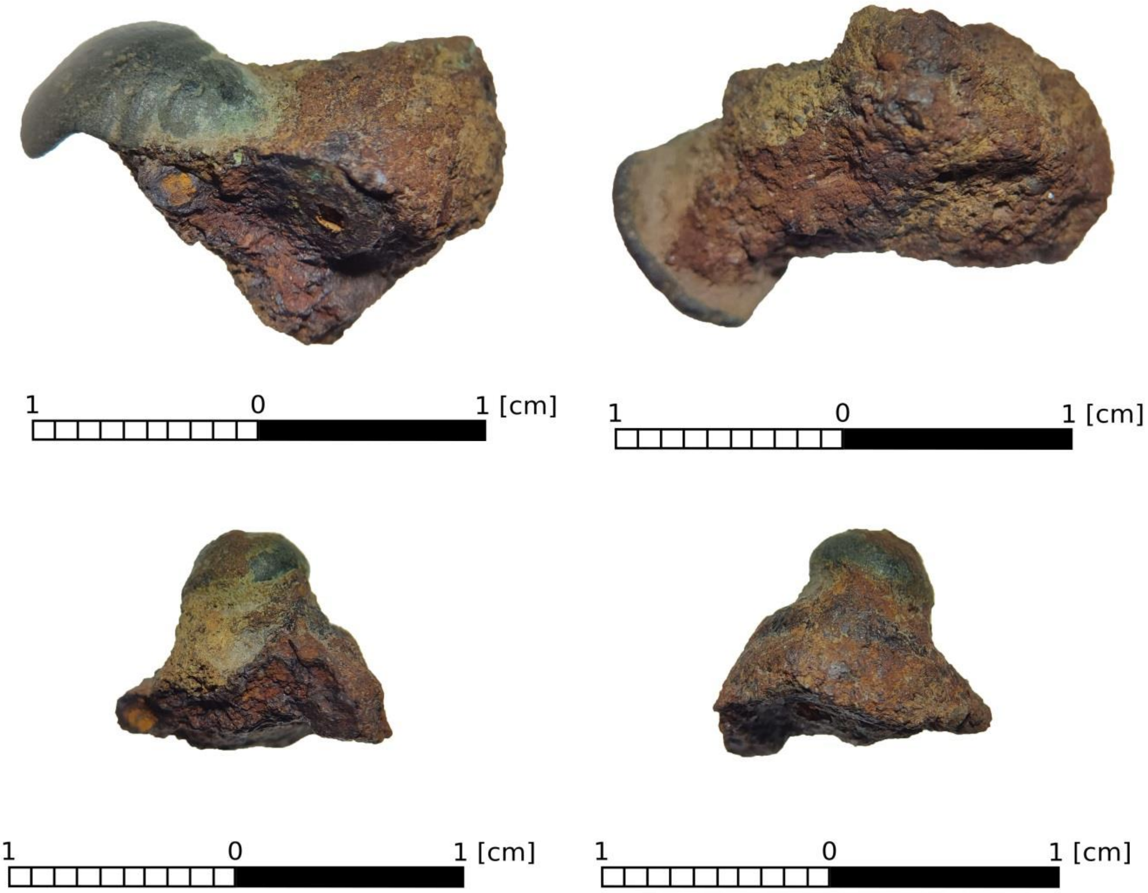


Figure 106. Husby brooch, find no. 131 - before conservation

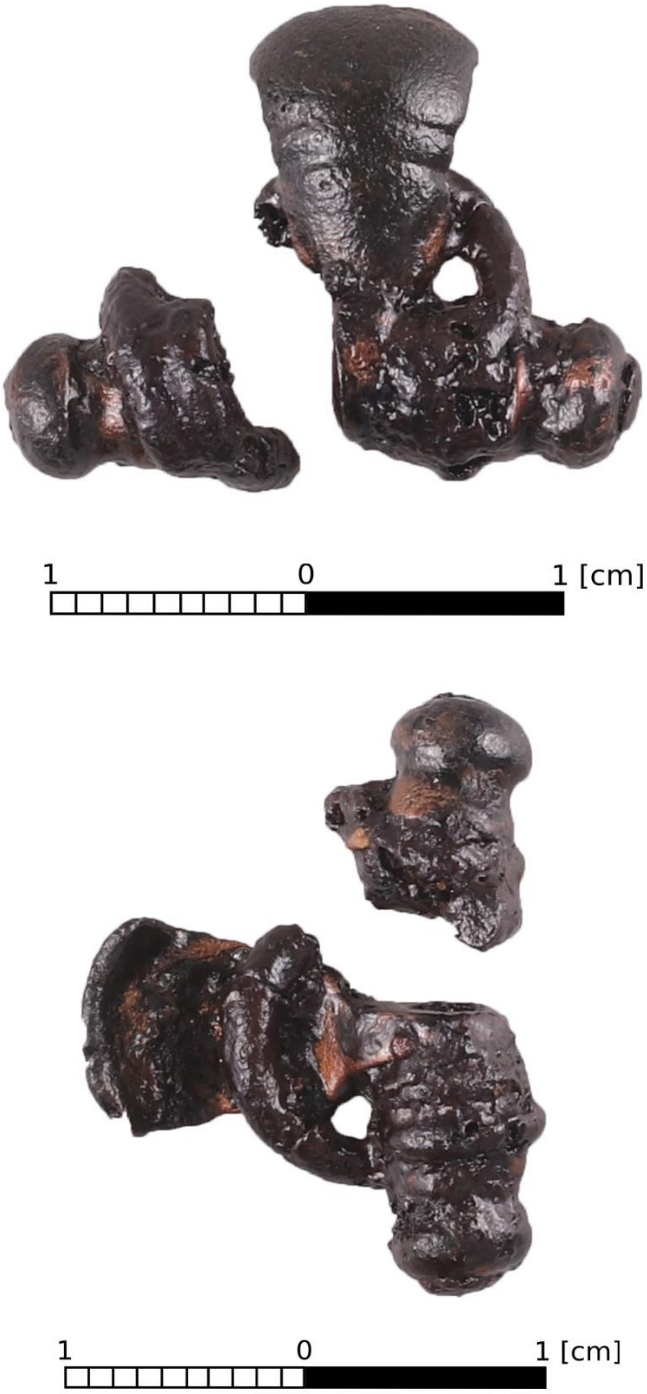


Figure 107. Husby brooch, find no. 131 - after cosnervation

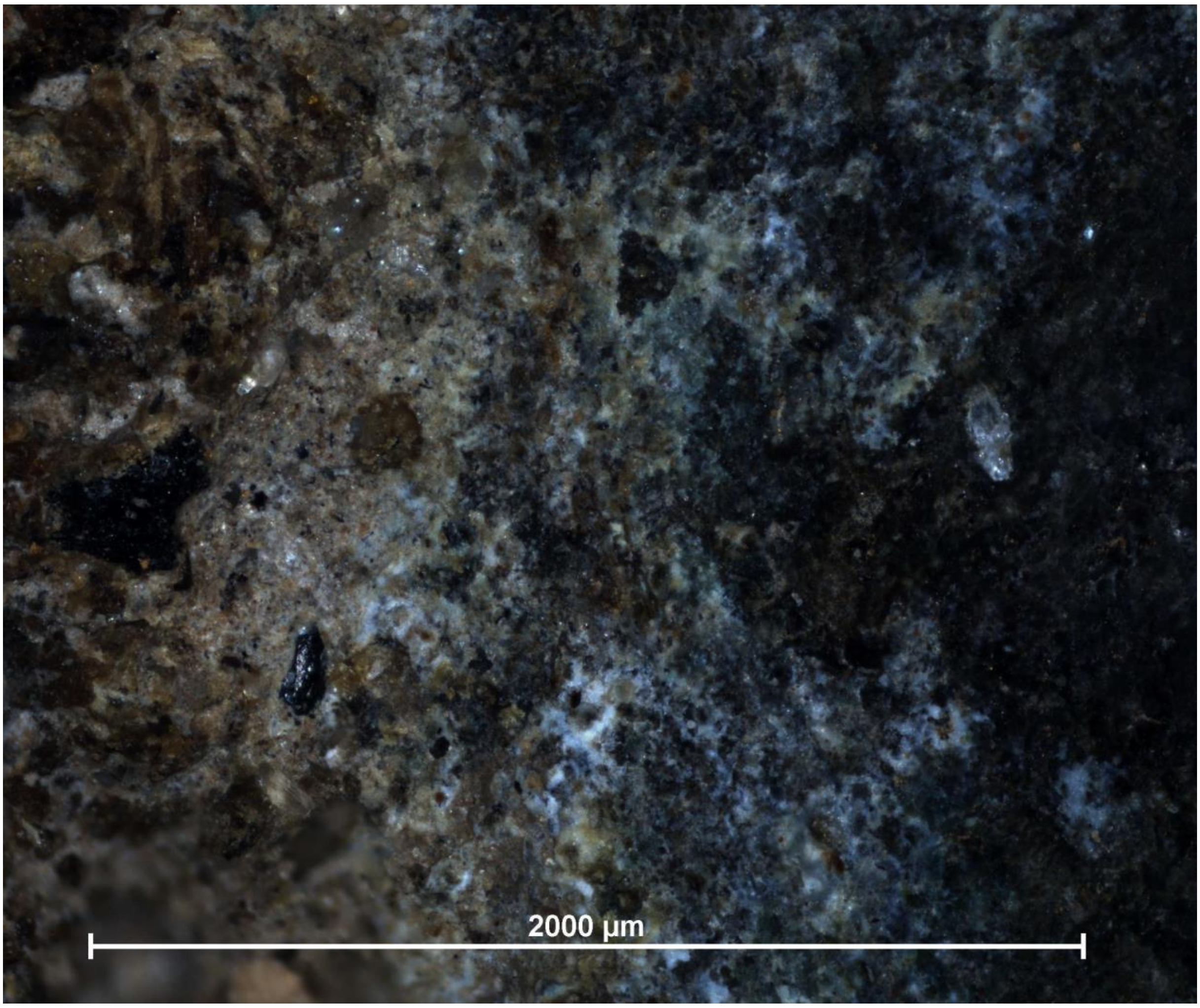


Figure 108. Husby brooch, find no. 131 - image from the Nikon Eclipse LV 150 N microscope

7.31. Table knife butt mount, find no. 132

Item	**Table knife butt mount**
Inv . No.	132
Site	Aska West Cemetery 2020
Dimensions [cm]	1,36 x 1,41 x 0,74
Weight [g]	3,414
Raw material	Cu alloy
Procedure	no. 1

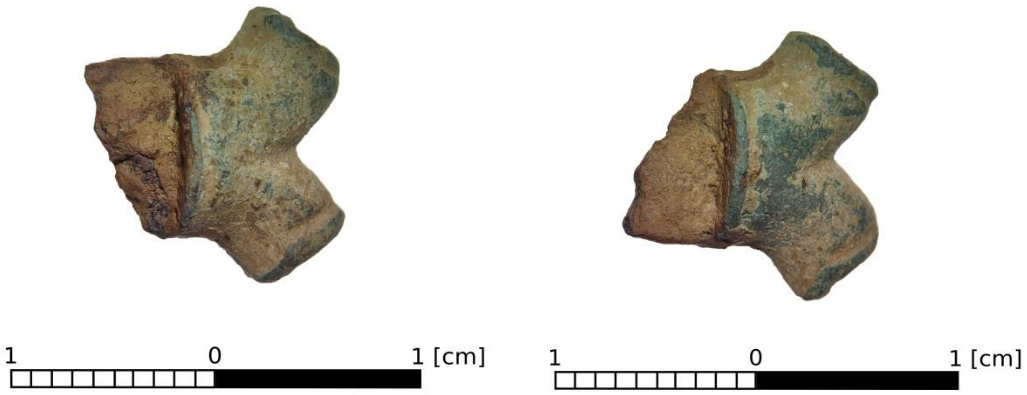


Figure 109. Table knife butt mount, find no. 132 - before conservation

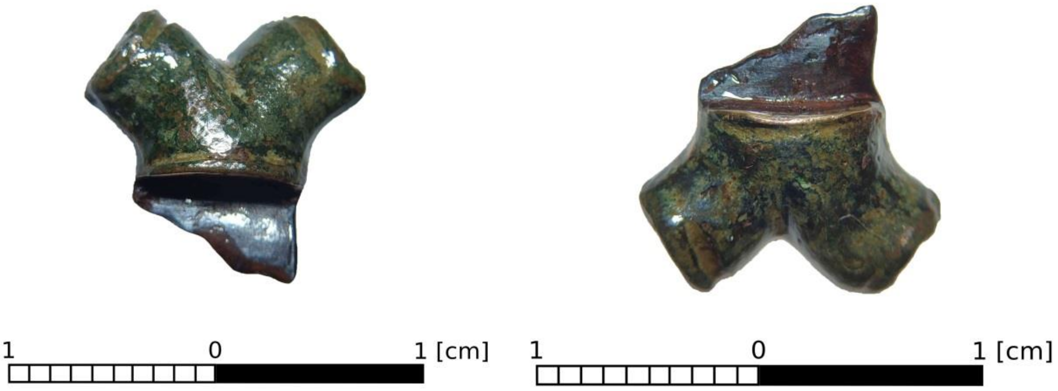


Figure 110. Table knife butt mount, find no. 132 - after conservation

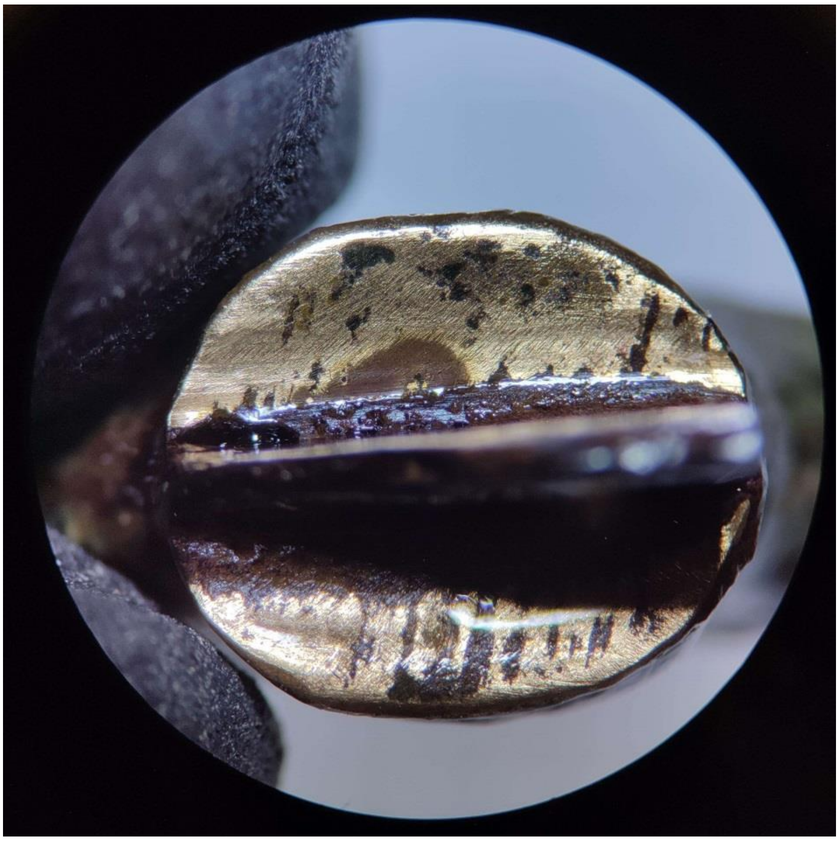


Figure 111. Table knife butt mount, find no. 132 - after conservation - close up

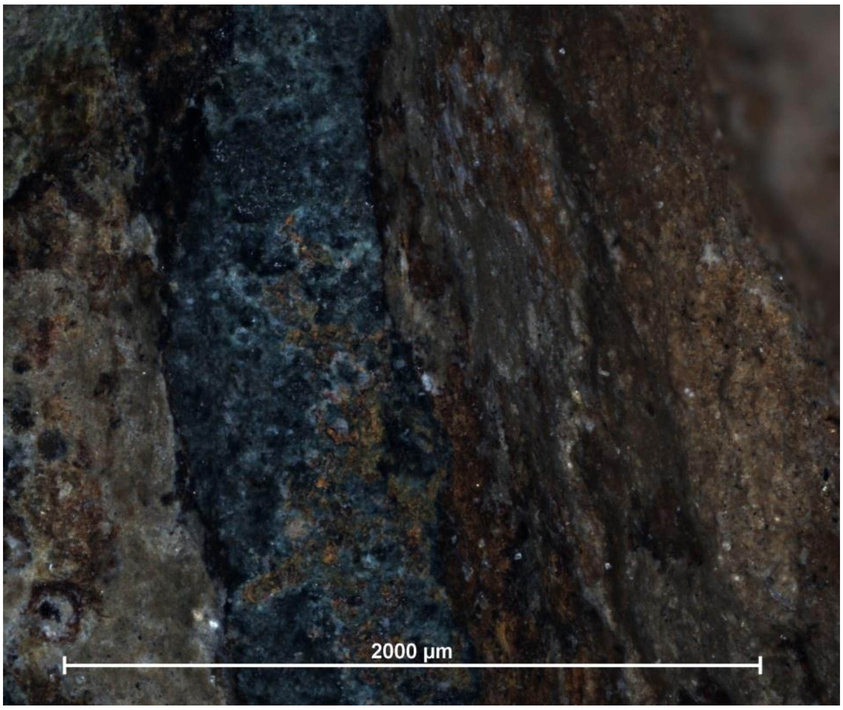


Figure 112. Table knife butt mount, find no. 132 - image from the Nikon Eclipse LV 150 N microscope

7.32. Tortoise brooch, find no. 133

Item	**Tortoise brooch**
Inv . No.	133
Site	Aska West Cemetery 2020
Dimensions [cm]	2,84 x 1,41 x 0,50
Weight [g]	2,629
Raw material	Cu alloy
Procedure	no. 1

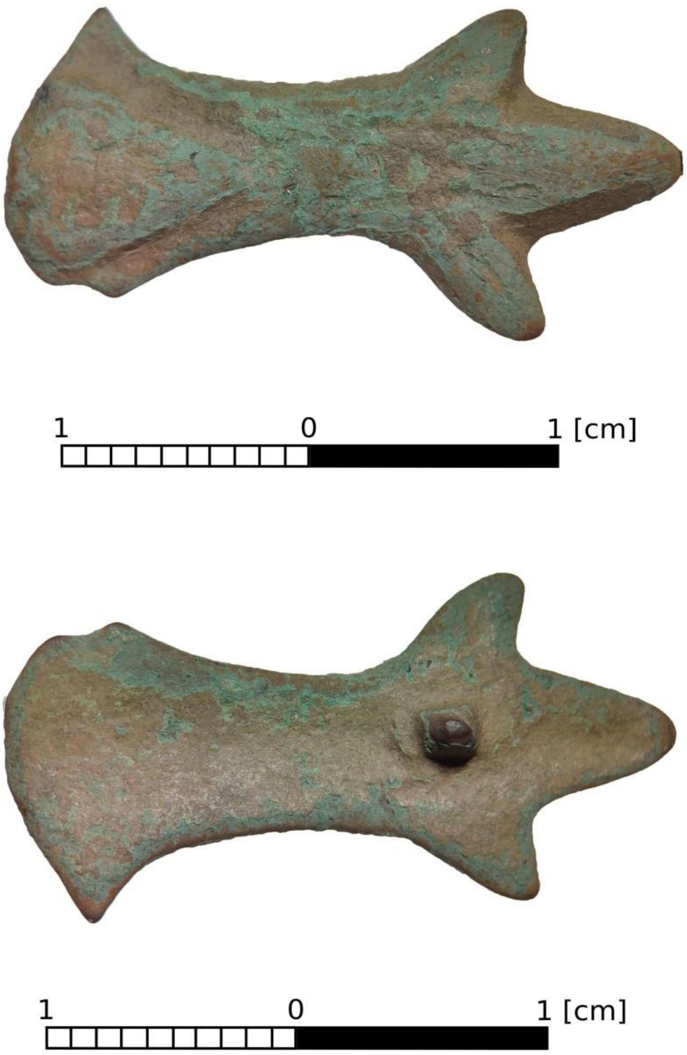


Figure 113. Tortoise brooch, find no. 133 - before cosnervation

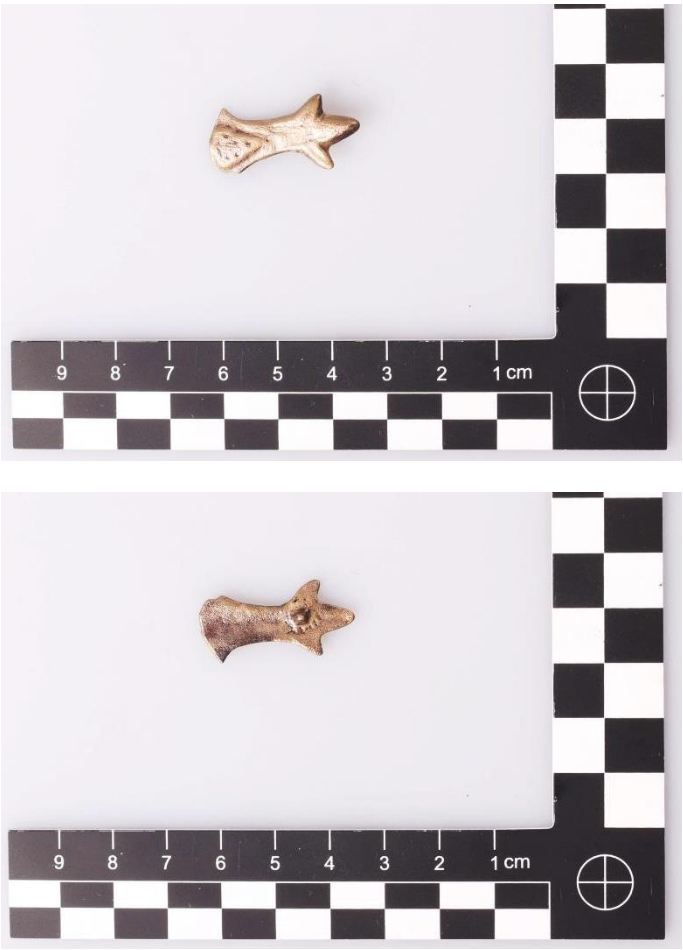


Figure 114. Tortoise brooch, find no. 133 - after conservation

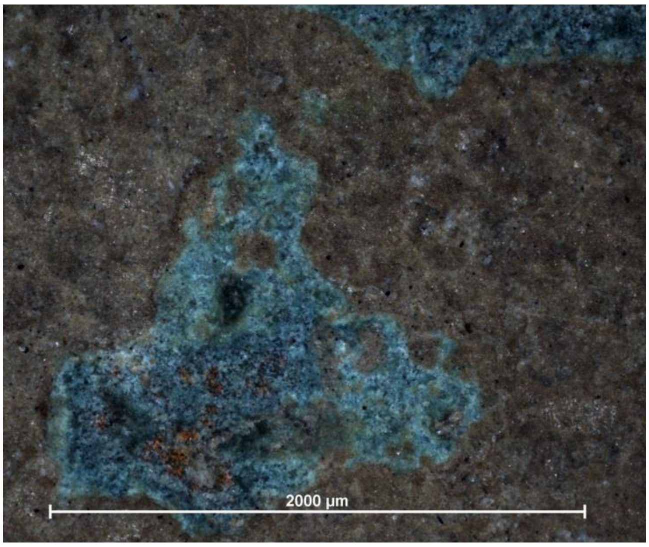


Figure 115. Tortoise brooch, find no. 133 - image from the Nikon Eclipse LV 150 N microscope

7.33. Fragment, find no. 134

Item	Fragment
Inv . No.	134
Site	Aska West Cemetery 2020
Dimensions [cm]	1,81 x 1,18 x 0,32
Weight [g]	1,298
Raw material	Cu alloy
Procedure	no. 1

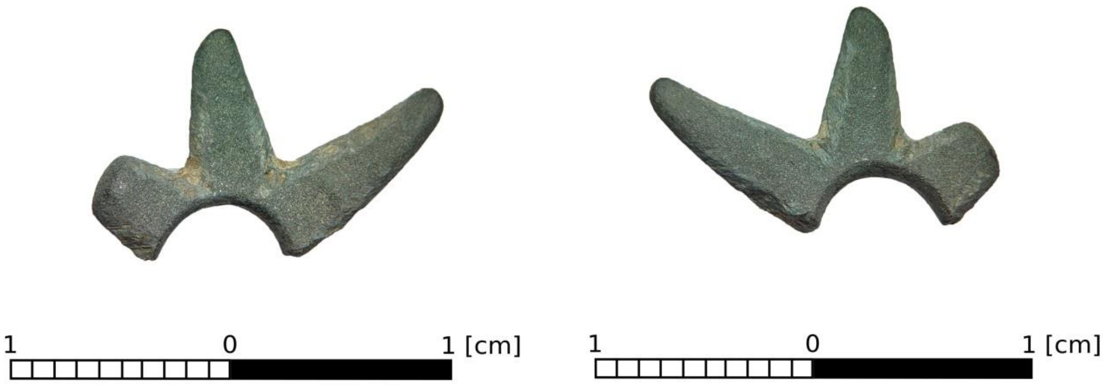


Figure 116. Fragment, find no. 134 - before conservation

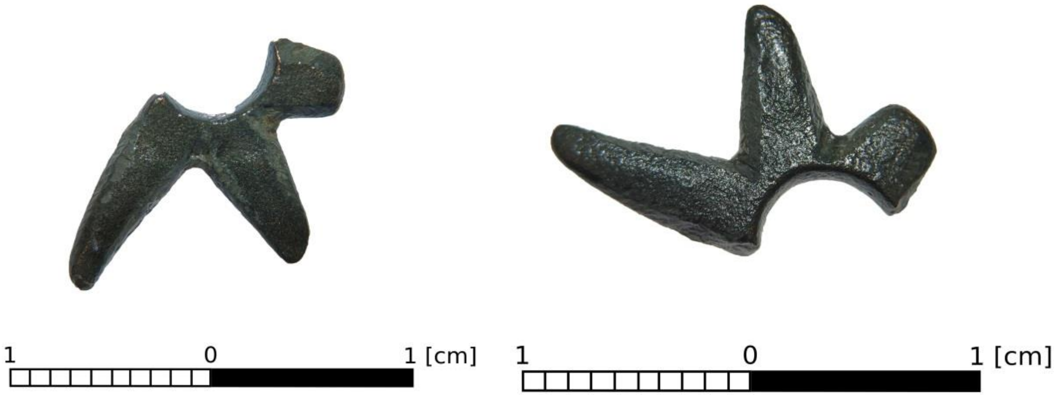


Figure 117. Fragment, find no. 134 - after conservation

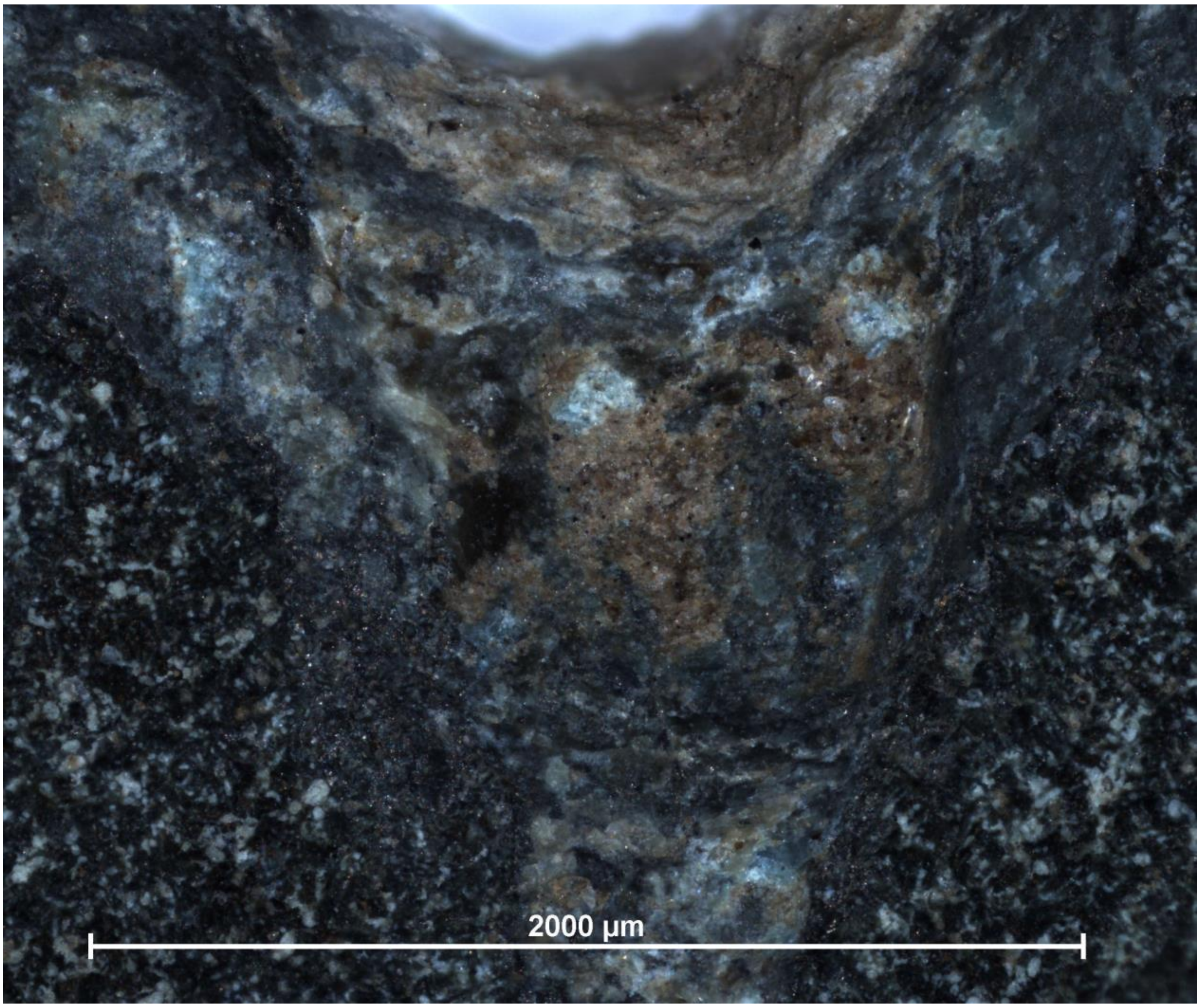


Figure 118. Fragment, find no. 134 - image from the Nikon Eclipse LV 150 N microscope

7.34. Eq-arm brooch, find no. 135

Item	**Eq-arm brooch**
Inv . No.	135
Site	Aska West Cemetery 2020
Dimensions [mm]	length 31.2, maximum width 29.6, maximum thickness 2.6
Weight [g]	9,192
Raw material	Cu alloy
Procedure	no. 1

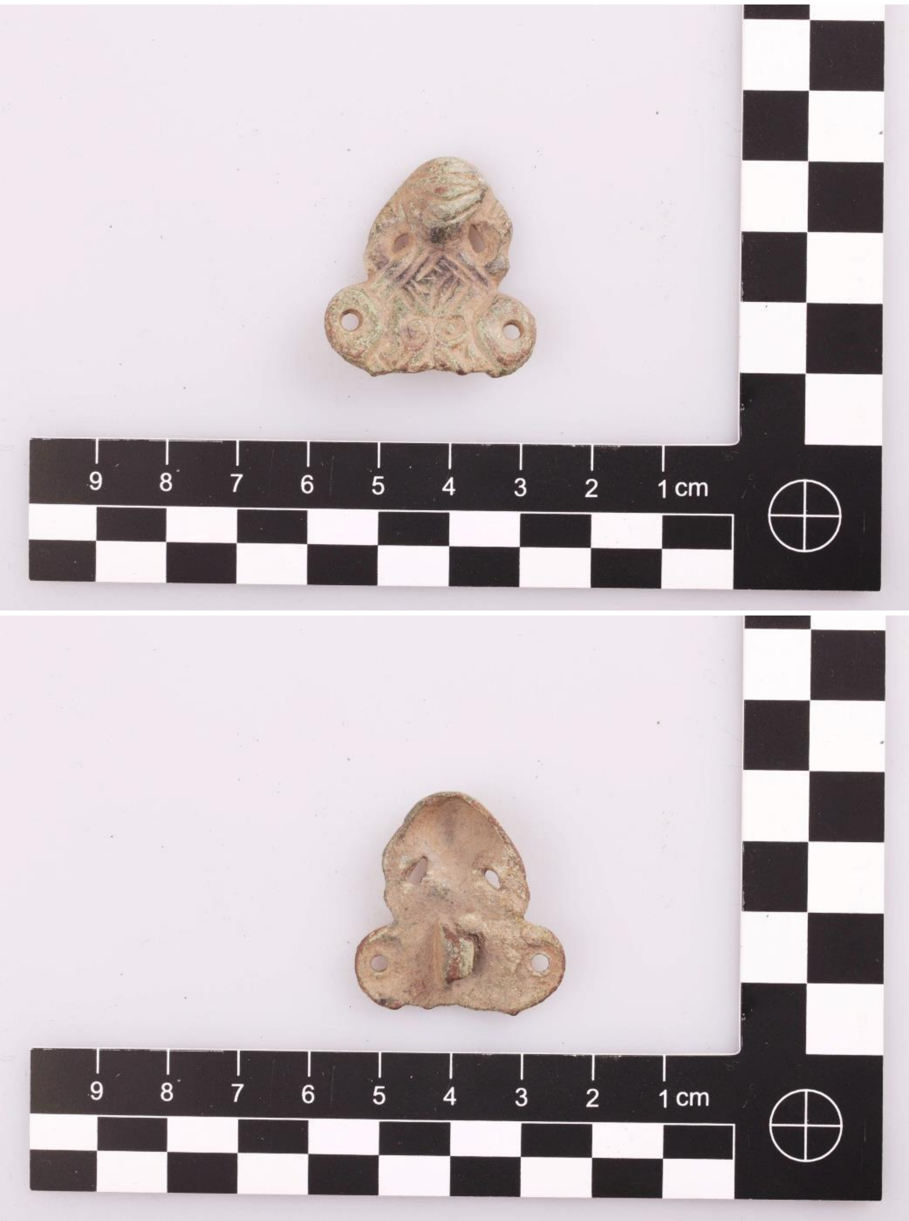


Figure 119. Eq-arm brooch, find no. 135 - before cosnervation

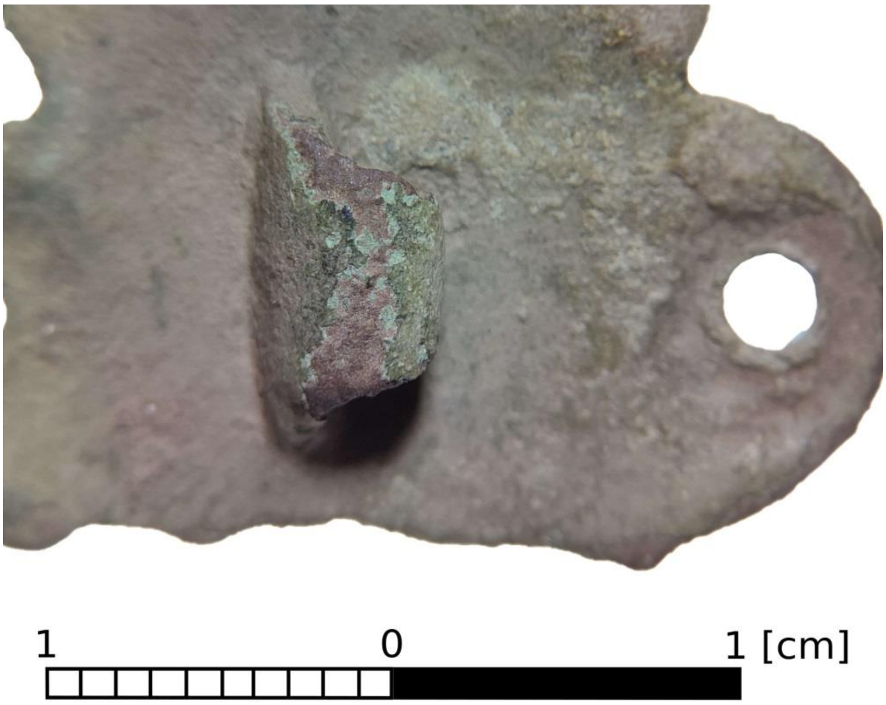


Figure 120. Eq-arm brooch, find no. 135 - before conservation - close up

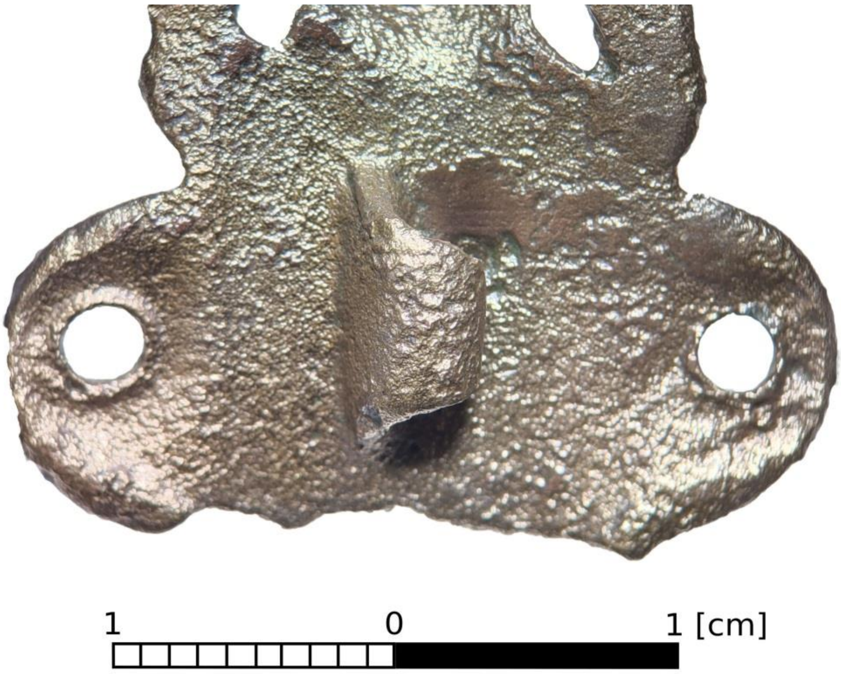


Figure 121. Eq-arm brooch, find no. 135 - after conservation - close up

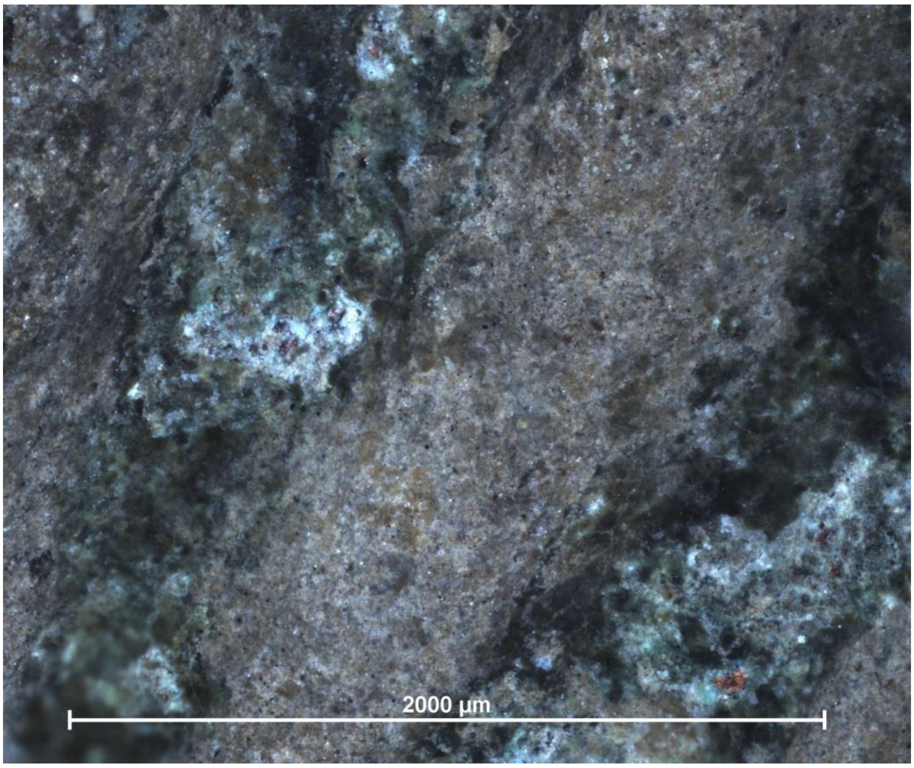


Figure 122. Eq-arm brooch, find no. 135 - before conservation - image from the Nikon Eclipse LV 150 N microscope

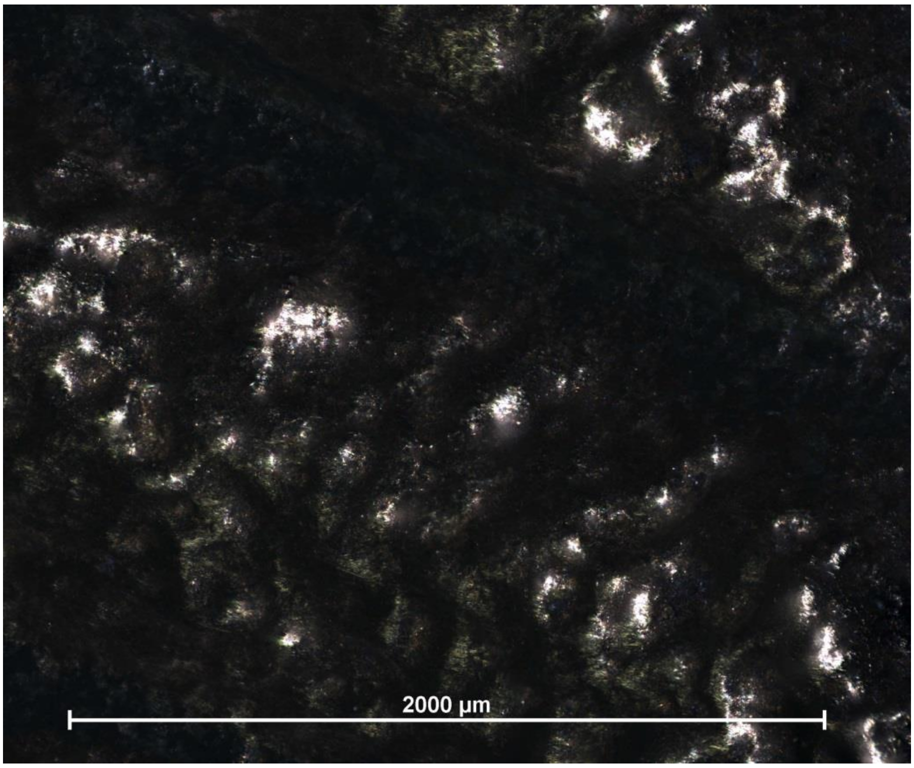


Figure 123. Eq-arm brooch, find no. 135 - after conservation - image from the Nikon Eclipse LV 150 N microscope

7.35. Strap mount, find no. 136

Item	**Strap mount**
Inv . No.	136
Site	Aska West Cemetery 2020
Dimensions [cm]	1,57 x 1,52 x 0,44
Weight [g]	2,221
Raw material	Cu alloy
Procedure	no. 1

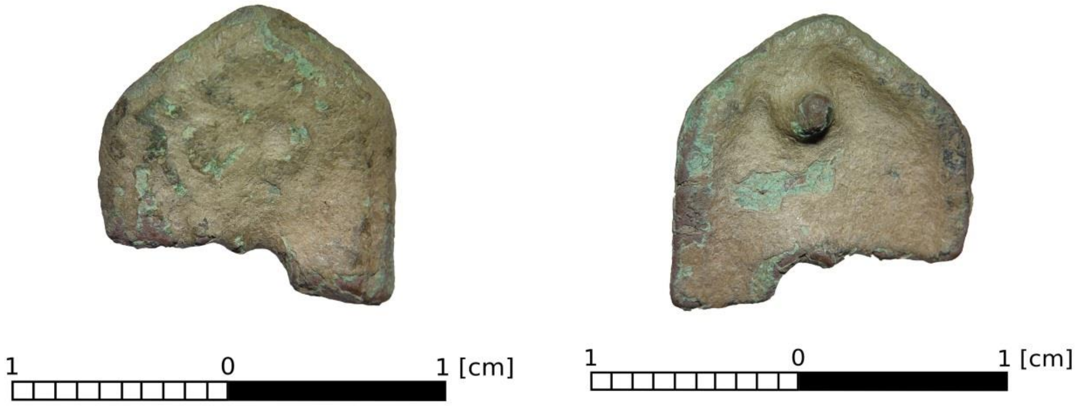


Figure 124. Strap mount, find no. 136 - before conservation

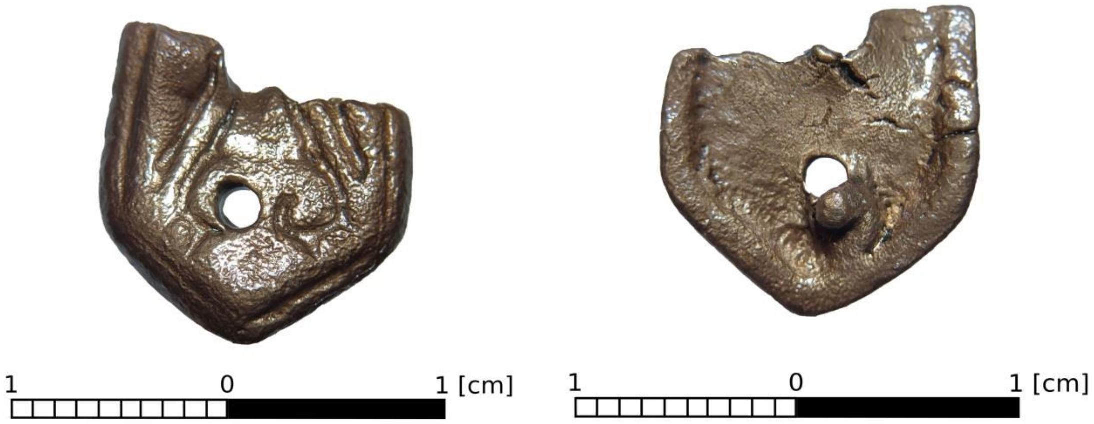


Figure 125. Strap mount, find no. 136 - after conservation

7.36. Thimble, find no. 137

Item	Thimble
Inv . No.	137
Site	Aska West Cemetery 2020
Dimensions [cm]	2,68 x 2,60 x 1,10
Weight [g]	3,201
Raw material	Cu alloy
Procedure	no. 1

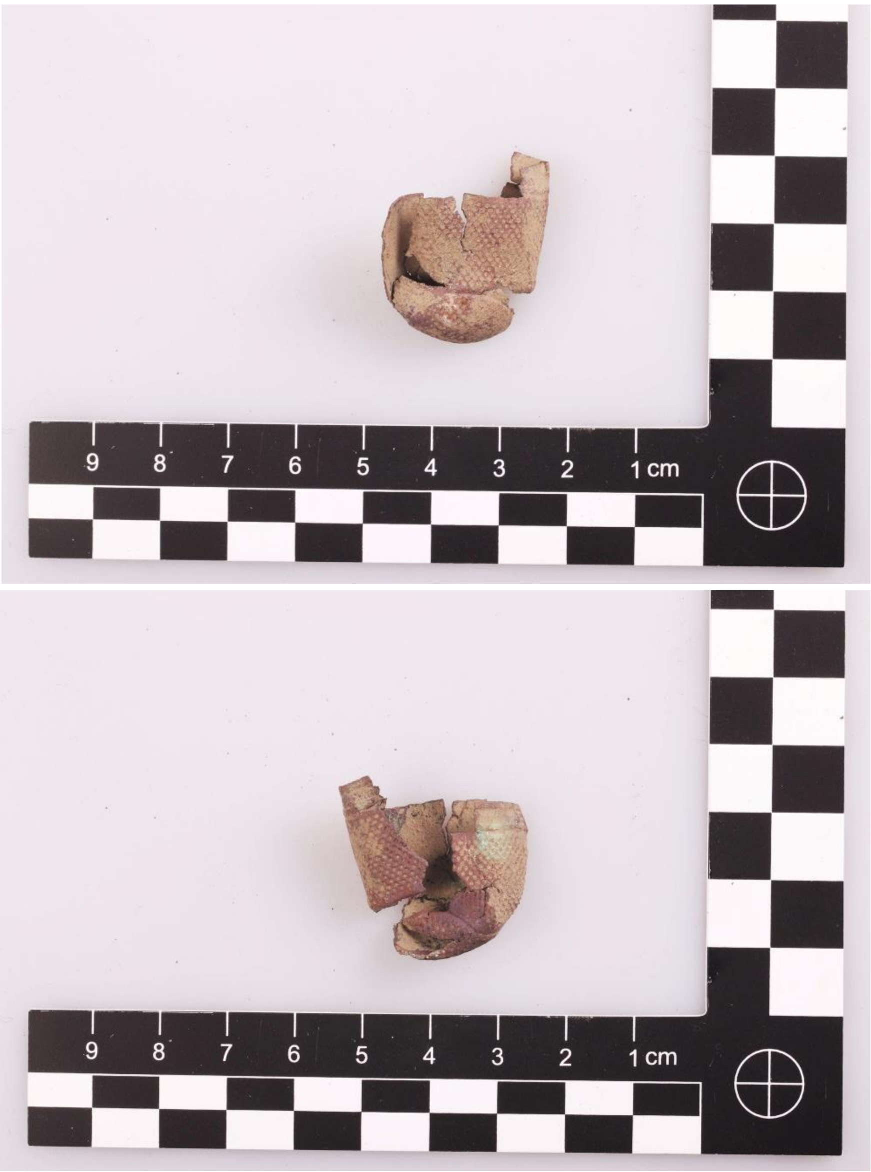
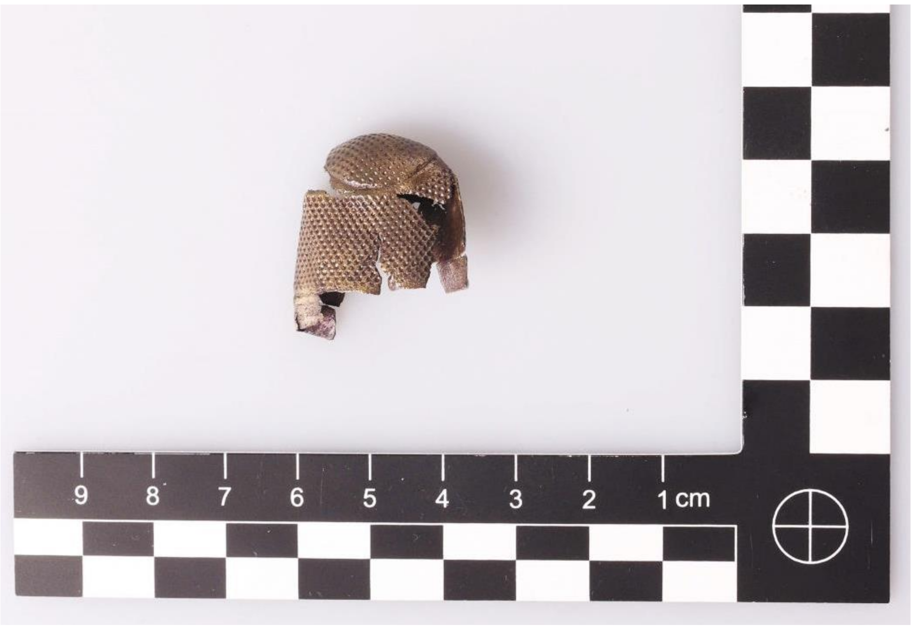


Figure 126. Thimble, find no. 137 - before conservation



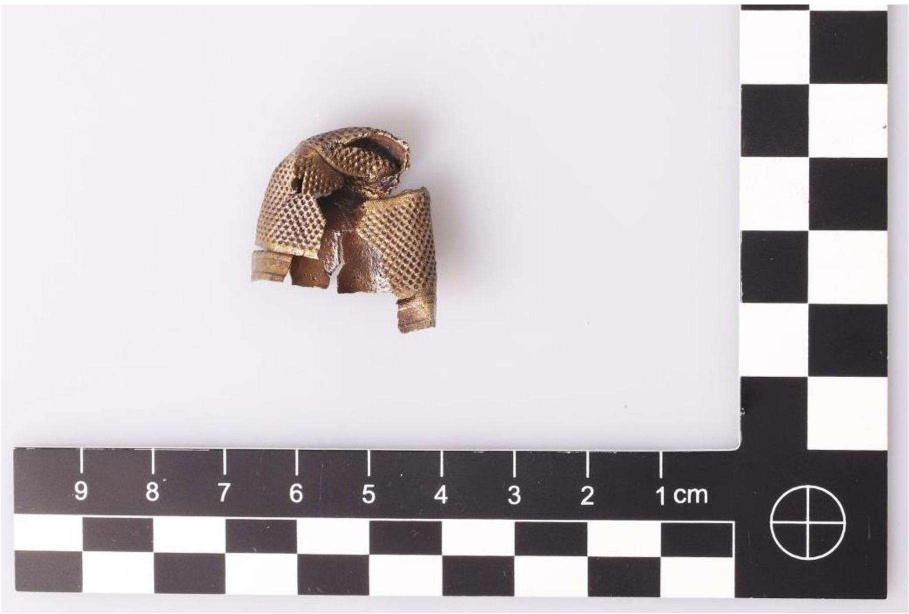


Figure 127. Thimble, find no. 137 - after conservation

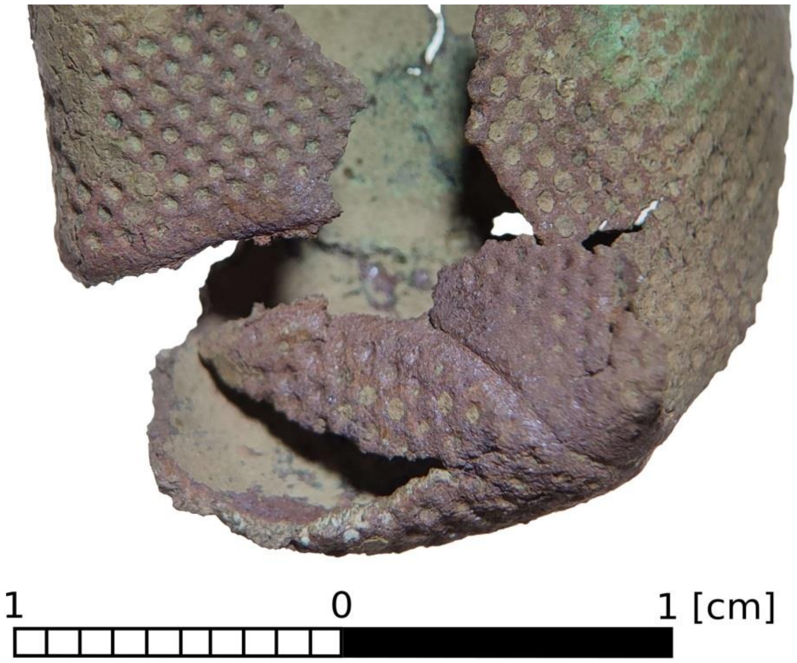


Figure 128. Thimble, find no. 137 - before conservation

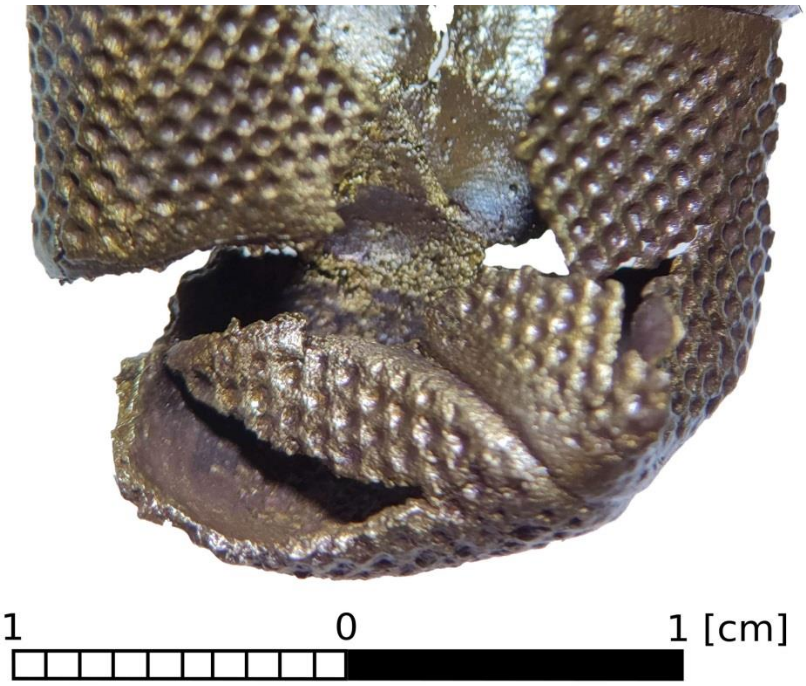


Figure 129. Thimble, find no. 137 - after conservation

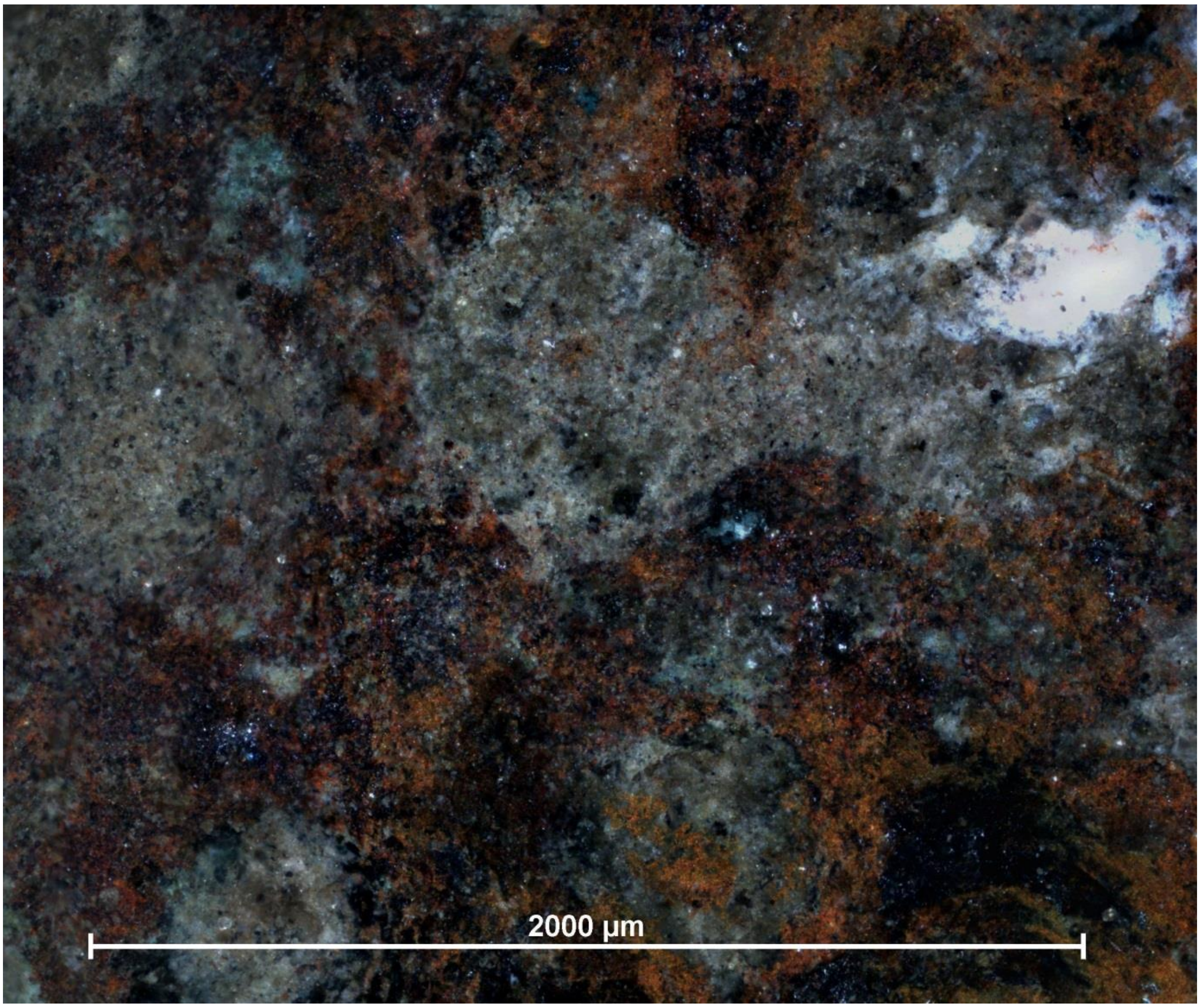


Figure 130. Thimble, find no. 137 - before conservation - image from the Nikon Eclipse LV 150 N microscope

7.37. Tortoise brooch, find no. 138

Item	Tortoise brooch
Inv . No.	138
Site	Aska West Cemetery 2020
Dimensions [cm]	4,20 x 1,72 x 0,14
Weight [g]	3,89
Raw material	Cu alloy
Procedure	no. 1

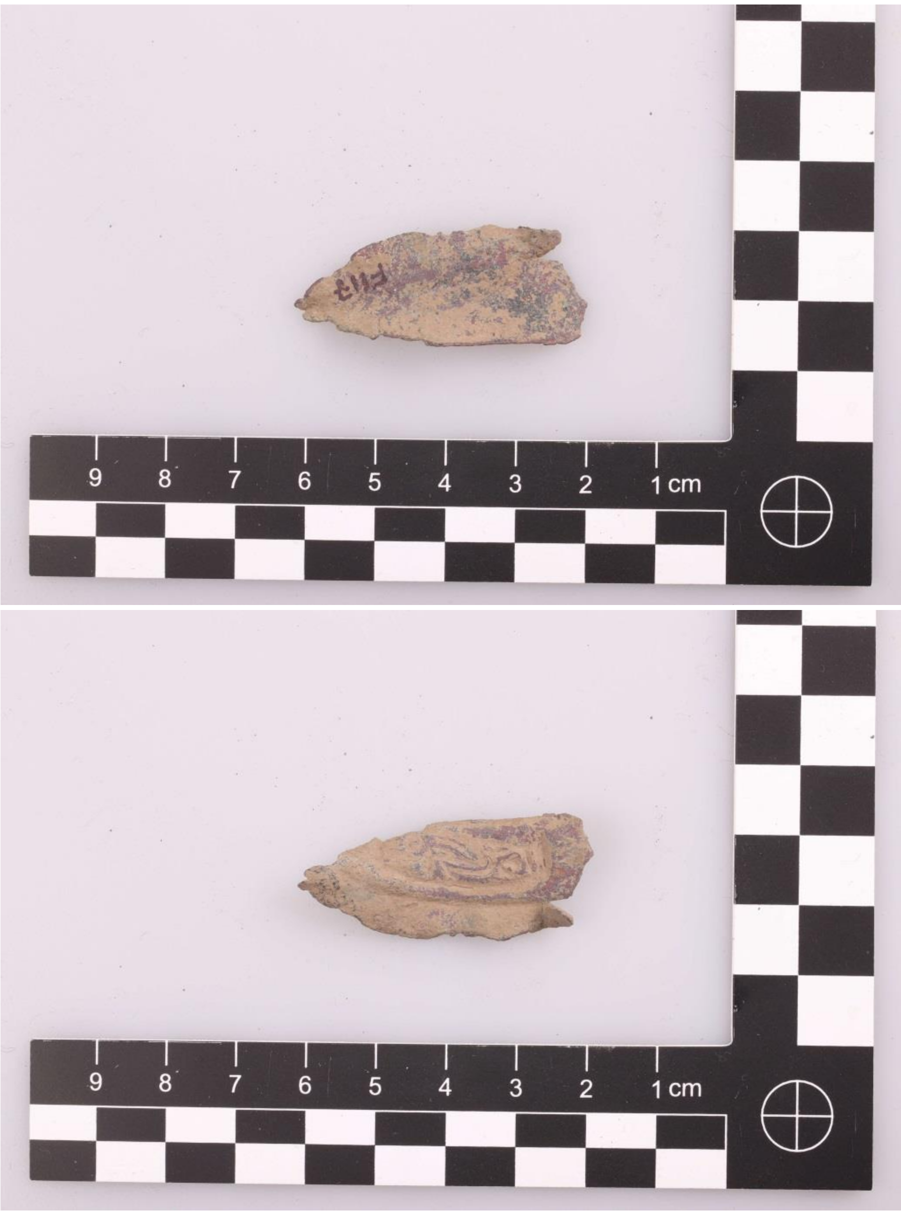


Figure 131. Tortoise brooch, find no. 138 - before conservation

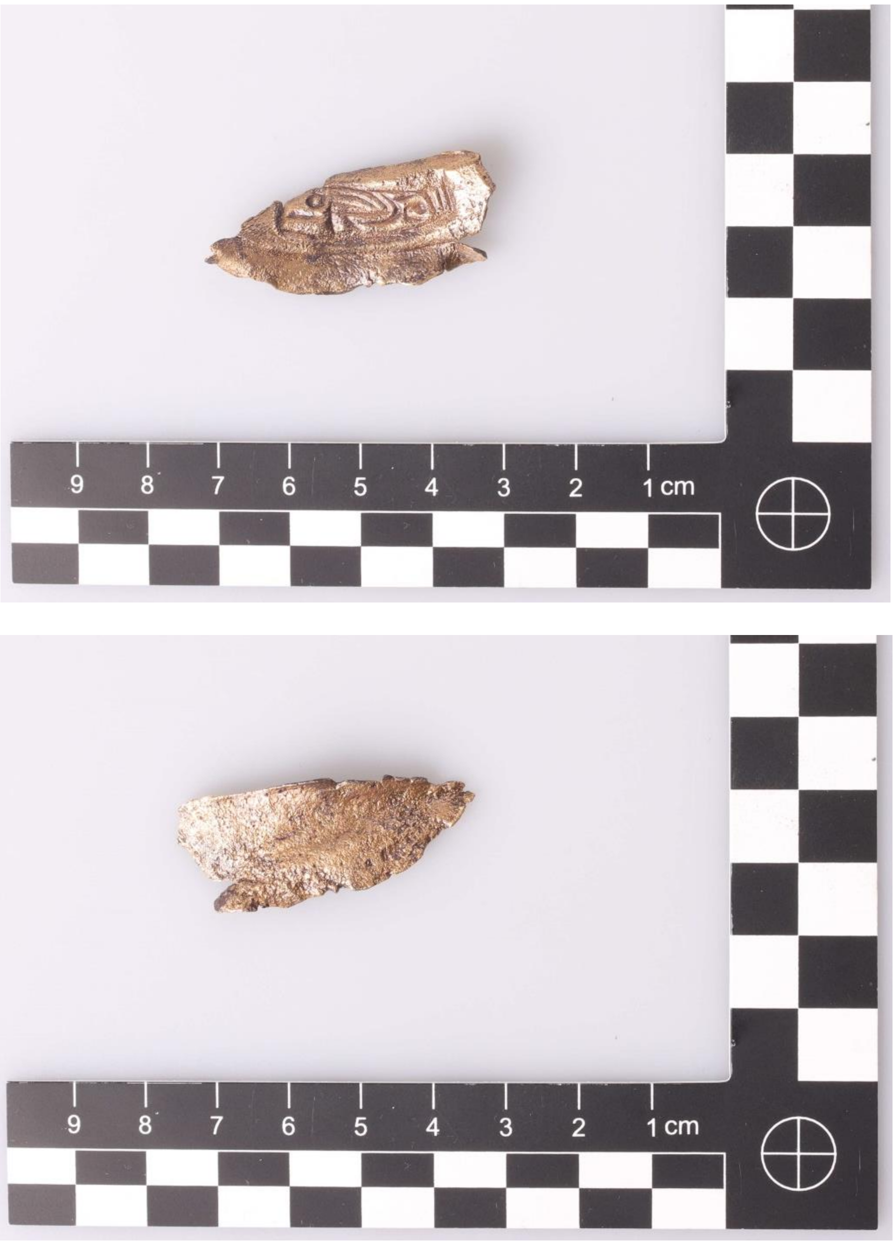


Figure 132. Tortoise brooch, find no. 138 - after cosnervation

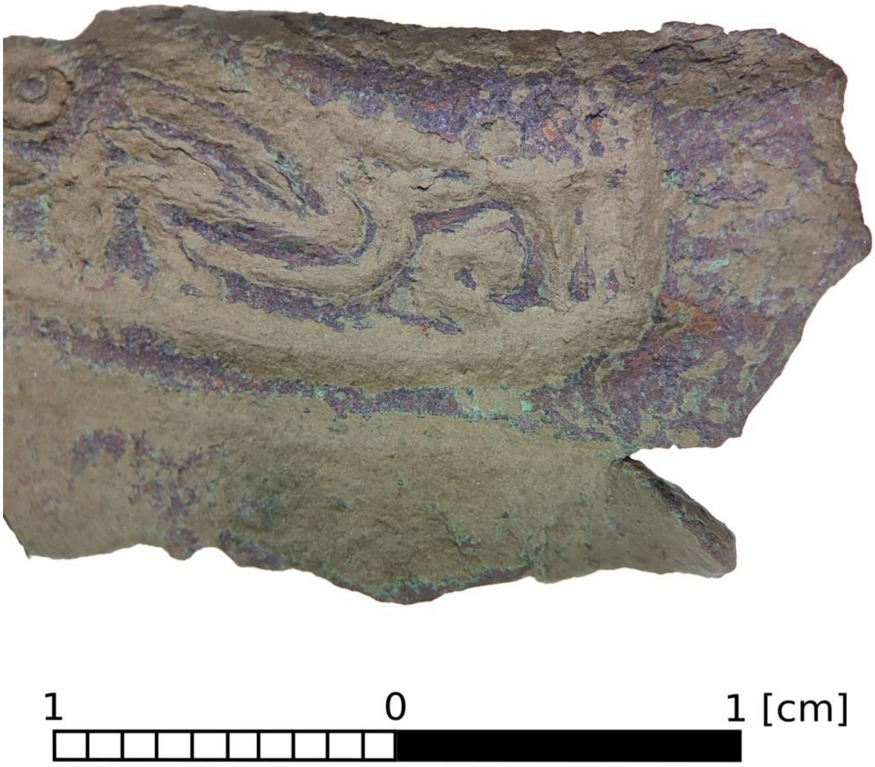


Figure 133. Tortoise brooch, find no. 138 - before conservation - close up

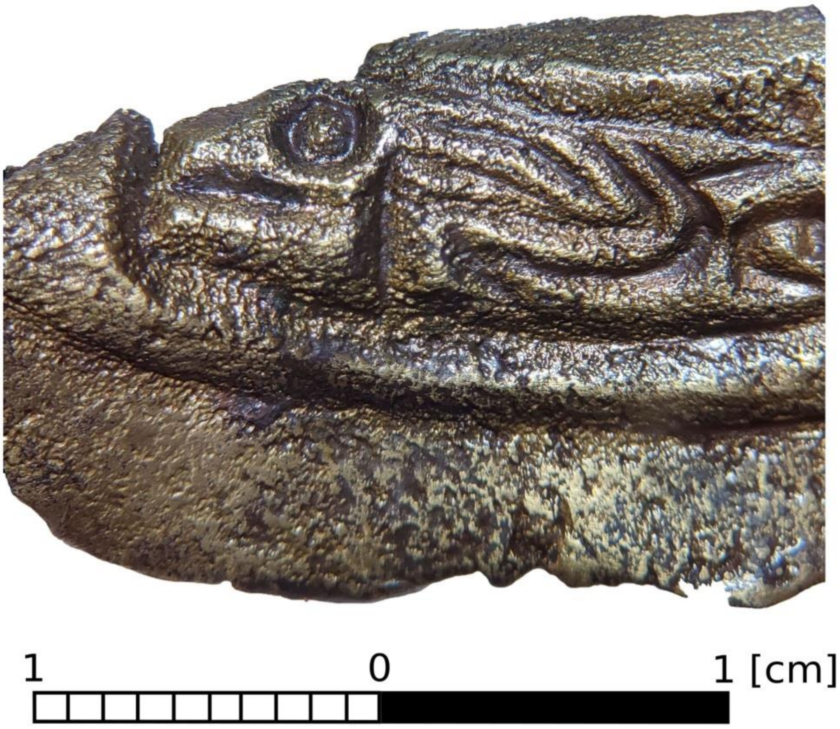


Figure 134. Tortoise brooch, find no. 138 - after conservation - close up

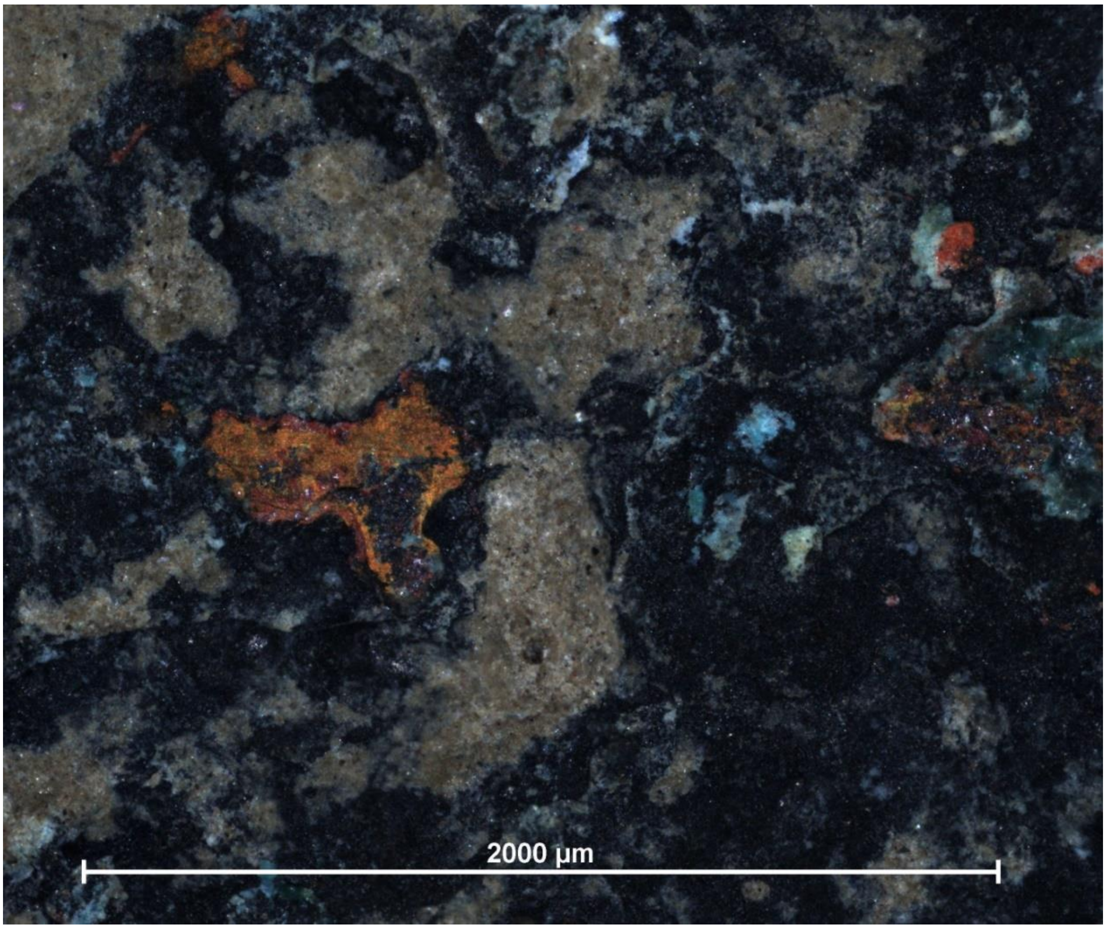
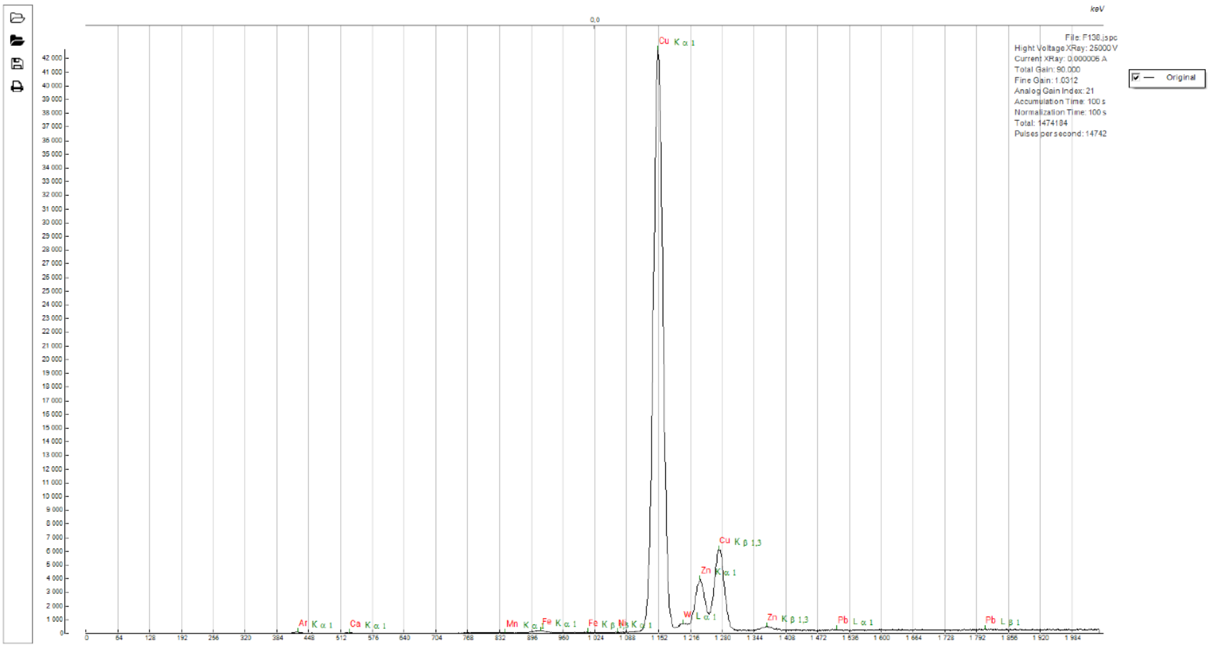


Figure 135. Tortoise brooch, find no. 138 - before conservation - image from the Nikon Eclipse LV 150 N microscope



File: F138.jspc
Hight Voltage XRay: 25000 V
Current XRay: 0.000006 A
Total Gain: 90.000
Fine Gain: 1.0312
Analog Gain Index: 21
Accumulation Time: 100 s
Normalization Time: 100 s
Total: 1474184
Pulses per second: 14742

Figure 136.. Tortoise brooch, find no. 138 - spectrogram

7.38. Coin, find no. 140

Item	Coin
Inv . No.	140
Site	Aska West Cemetery 2020
Dimensions [cm]	diameter 1.98; thickness 0.08
Weight [g]	1,233
Raw material	Ag alloy
Procedure	no. 1

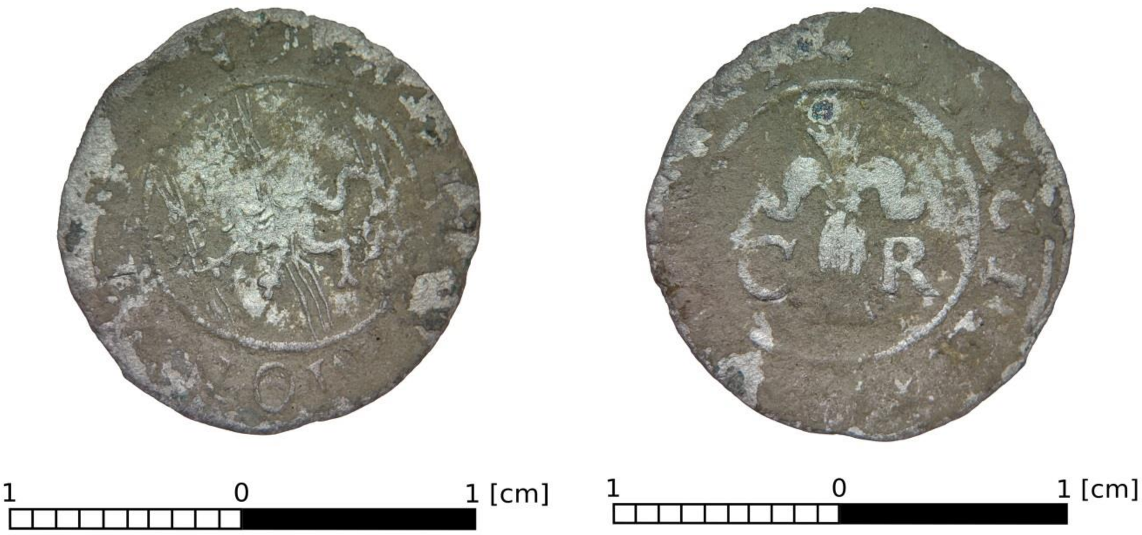


Figure 137. Coin, find no. 140 - before conservation

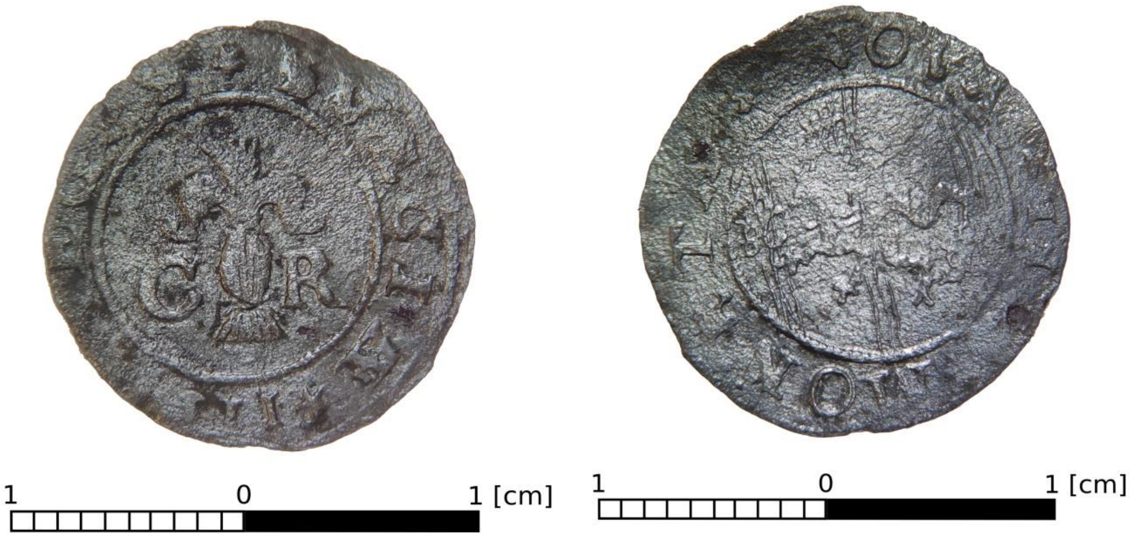


Figure 138. Coin, find no. 140 - after conservation

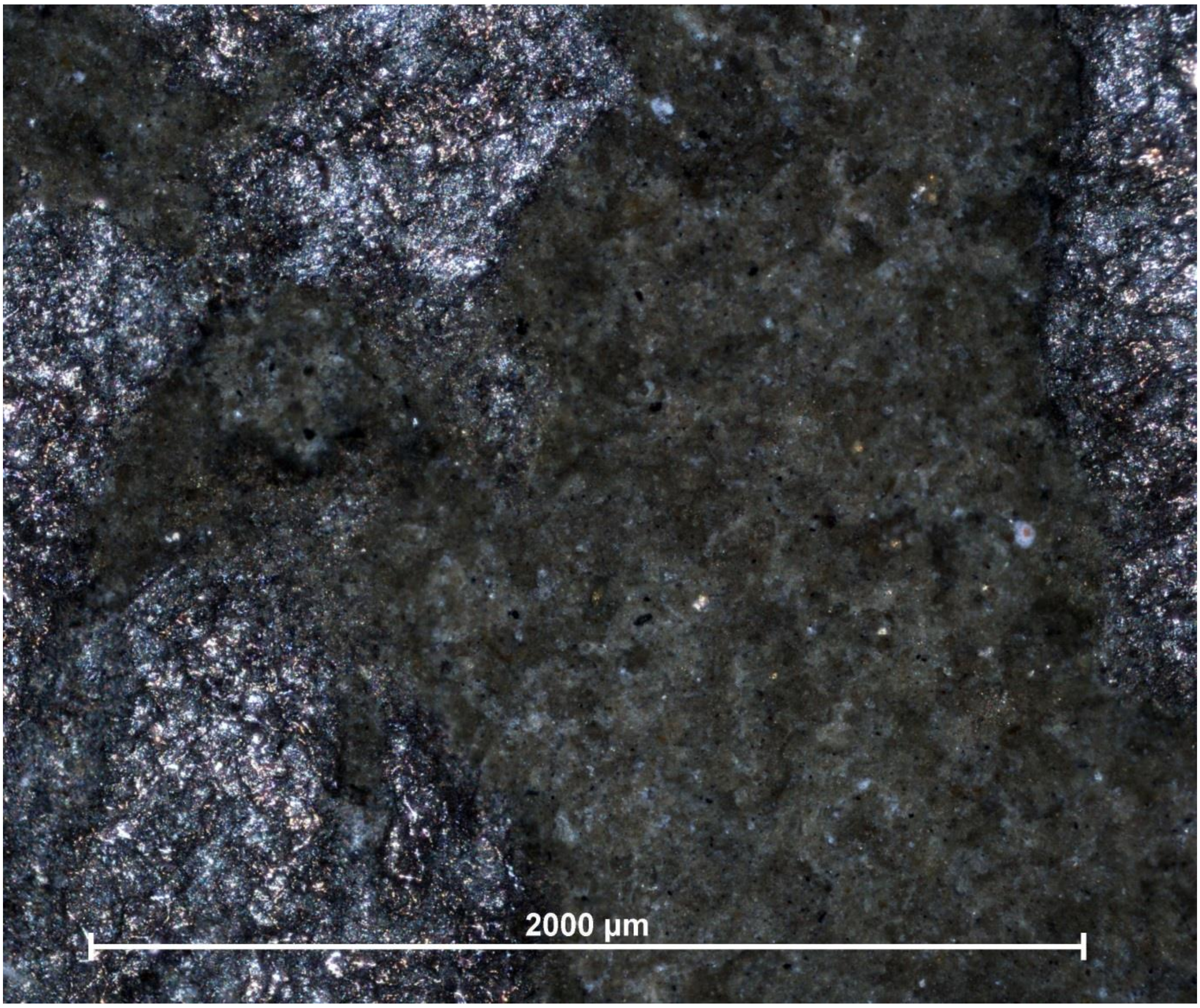


Figure 139. Coin, find no. 140 - before conservation - image from the Nikon Eclipse LV 150 N microscope

7.39. Eq-arm brooch, find no. 141

Item	**Eq-arm brooch**
Inv . No.	141
Site	Aska West Cemetery 2020
Dimensions [cm]	length 2.5; width 1.32; eyelet: length 0.48, width 0.32
Weight [g]	5,482
Raw material	Cu alloy; glass, zinc plated ?
Procedure	no. 1

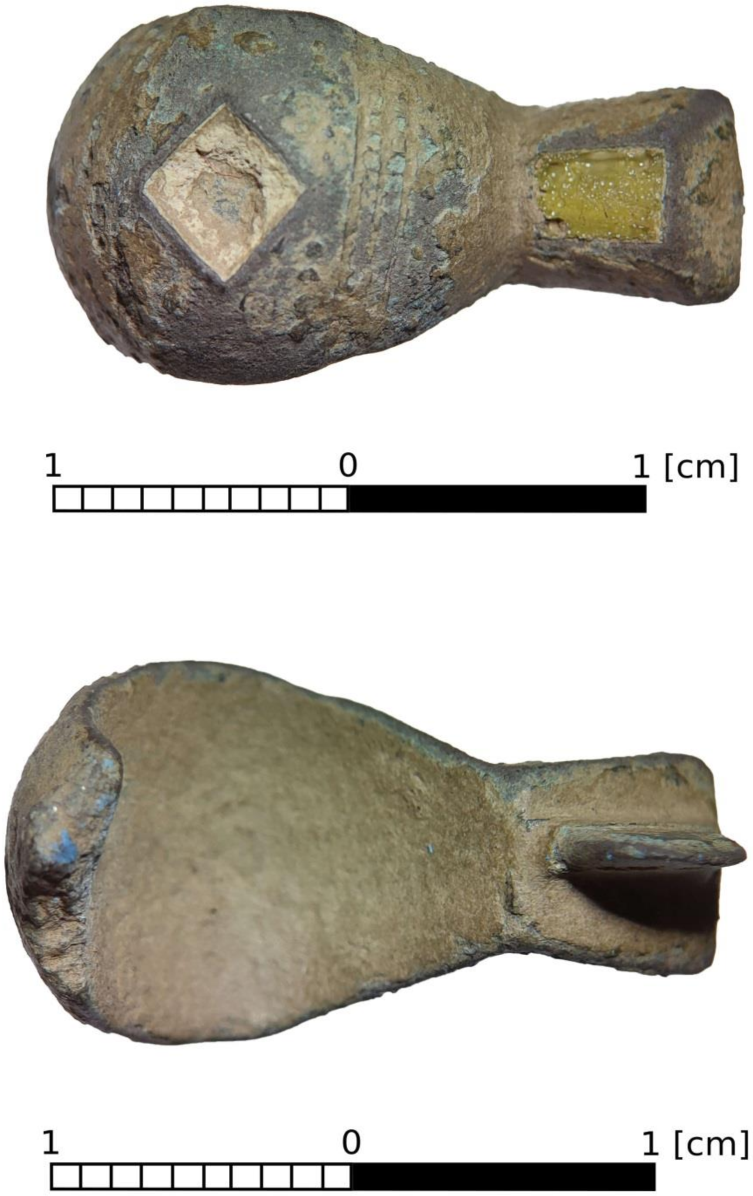


Figure 140. Eq-arm brooch, find no. 141 - before cosnervation

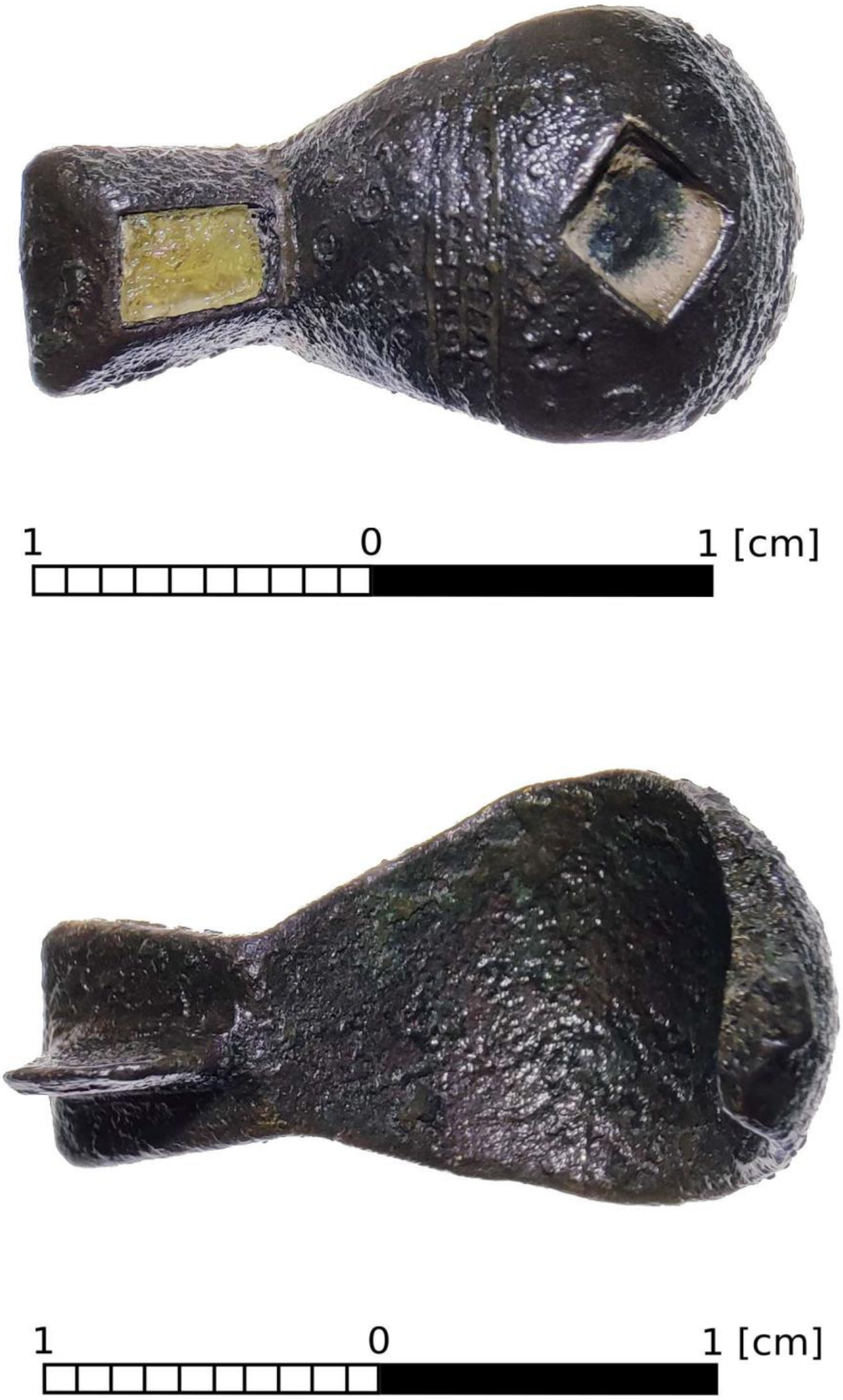


Figure 141. Eq-arm brooch, find no. 141 - after conservation

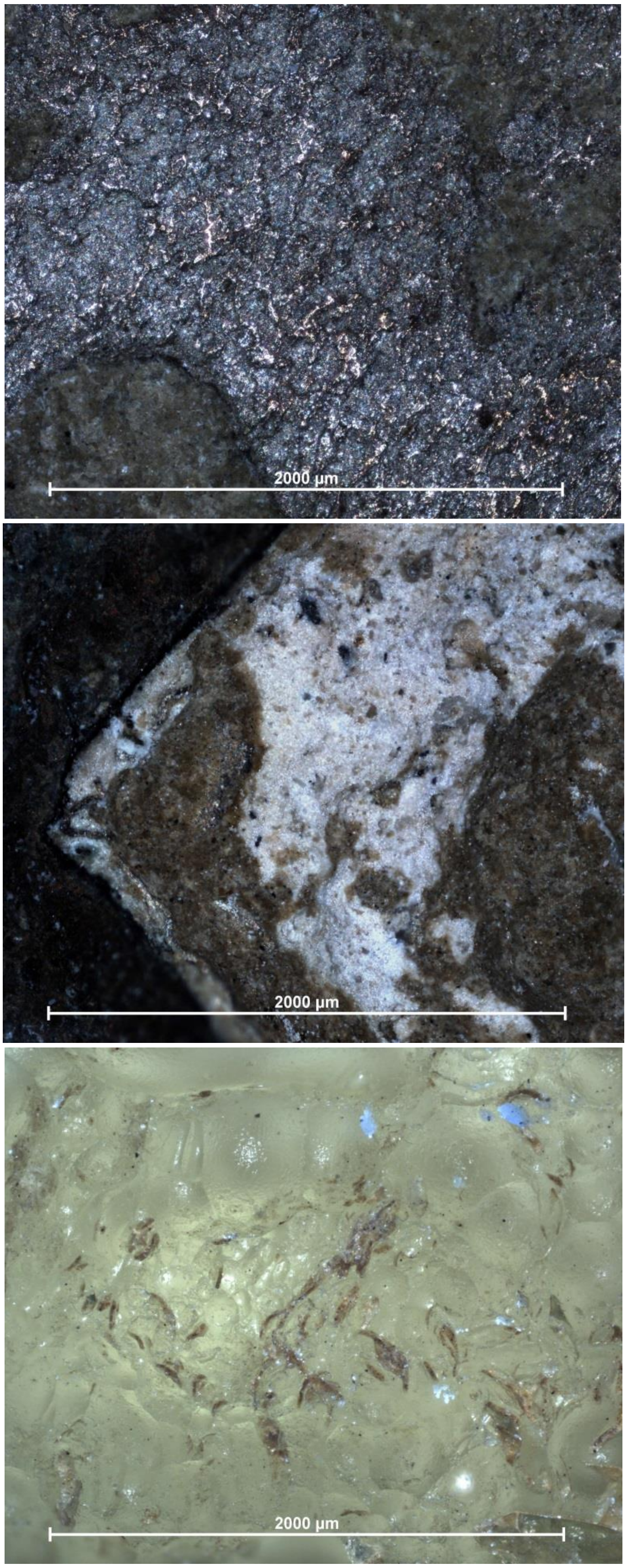


Figure 142. image from the Nikon Eclipse LV 150 N microscope- after conservation - image from the Nikon Eclipse LV 150 N microscope

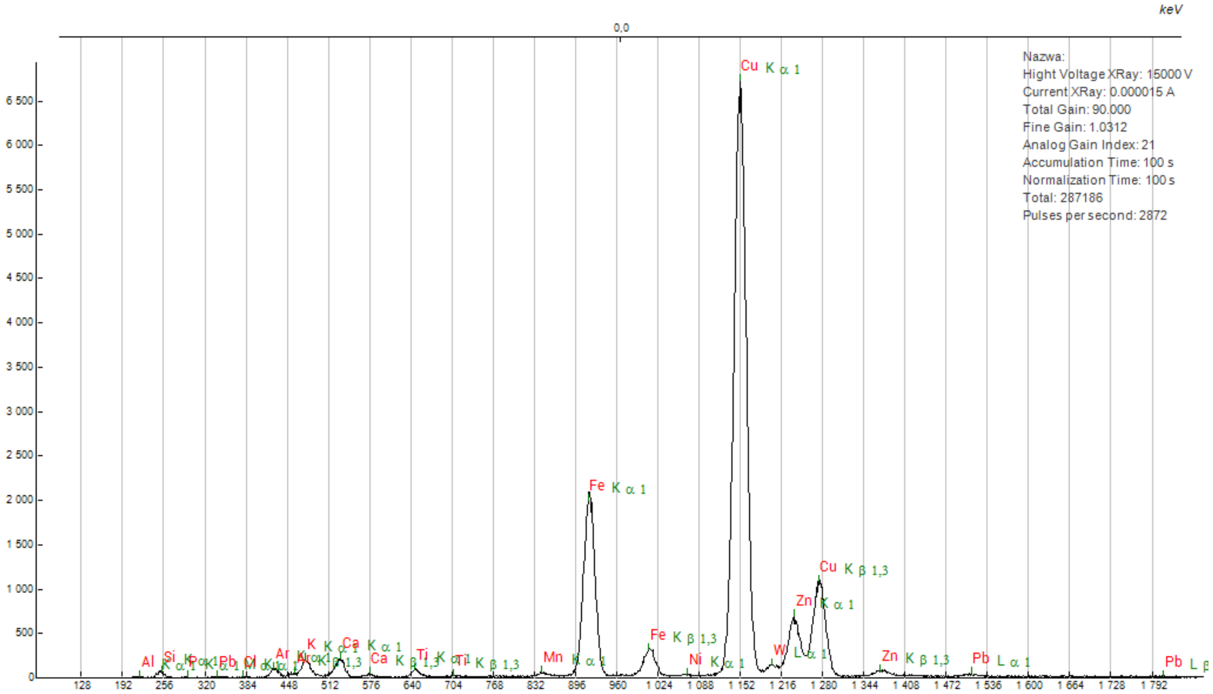


Figure 143. image from the Nikon Eclipse LV 150 N microscope - spectrogram

7.40. Eq-arm brooch, find no. 142

Item	**Eq-arm brooch**
Inv . No.	142
Site	Aska West Cemetery 2020
Dimensions [cm]	3.14 x 1.05 x 1.70 x 0.38 (max. bow thickness)
Weight [g]	7,695
Raw material	Cu alloy
Procedure	no. 1

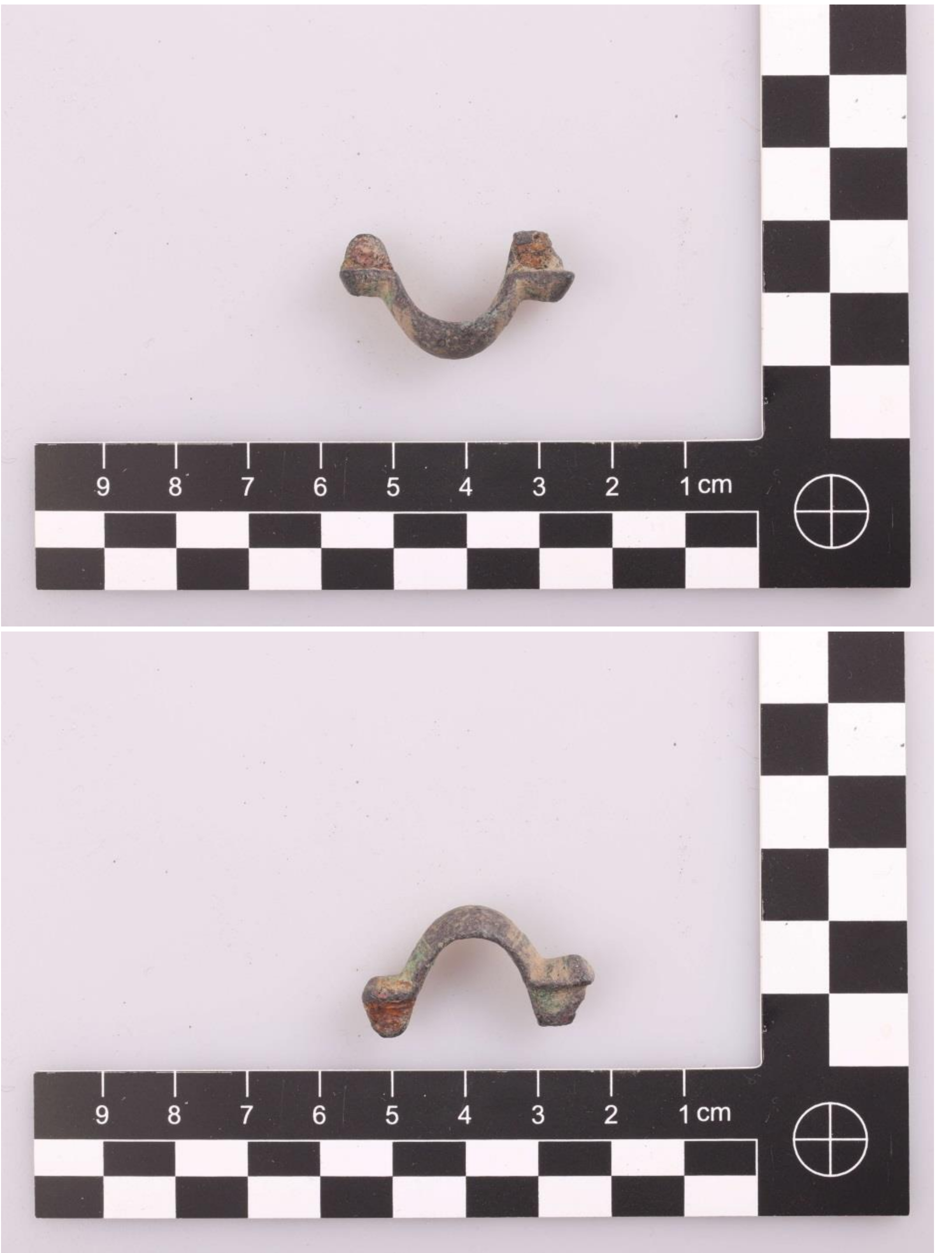


Figure 144. Eq-arm brooch, find no. 142 - before cosnervation

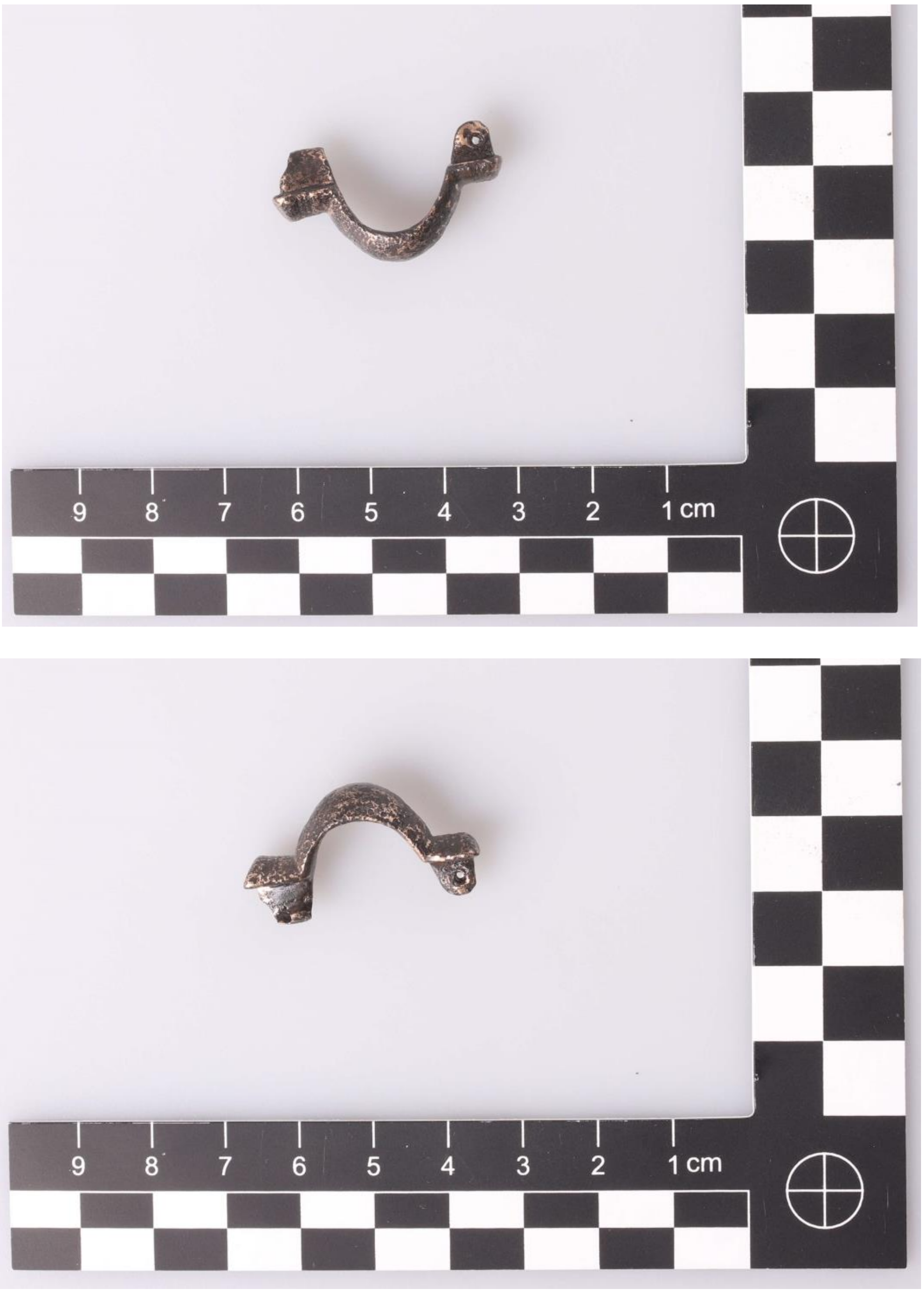


Figure 145. Eq-arm brooch, find no. 142 - after conservation

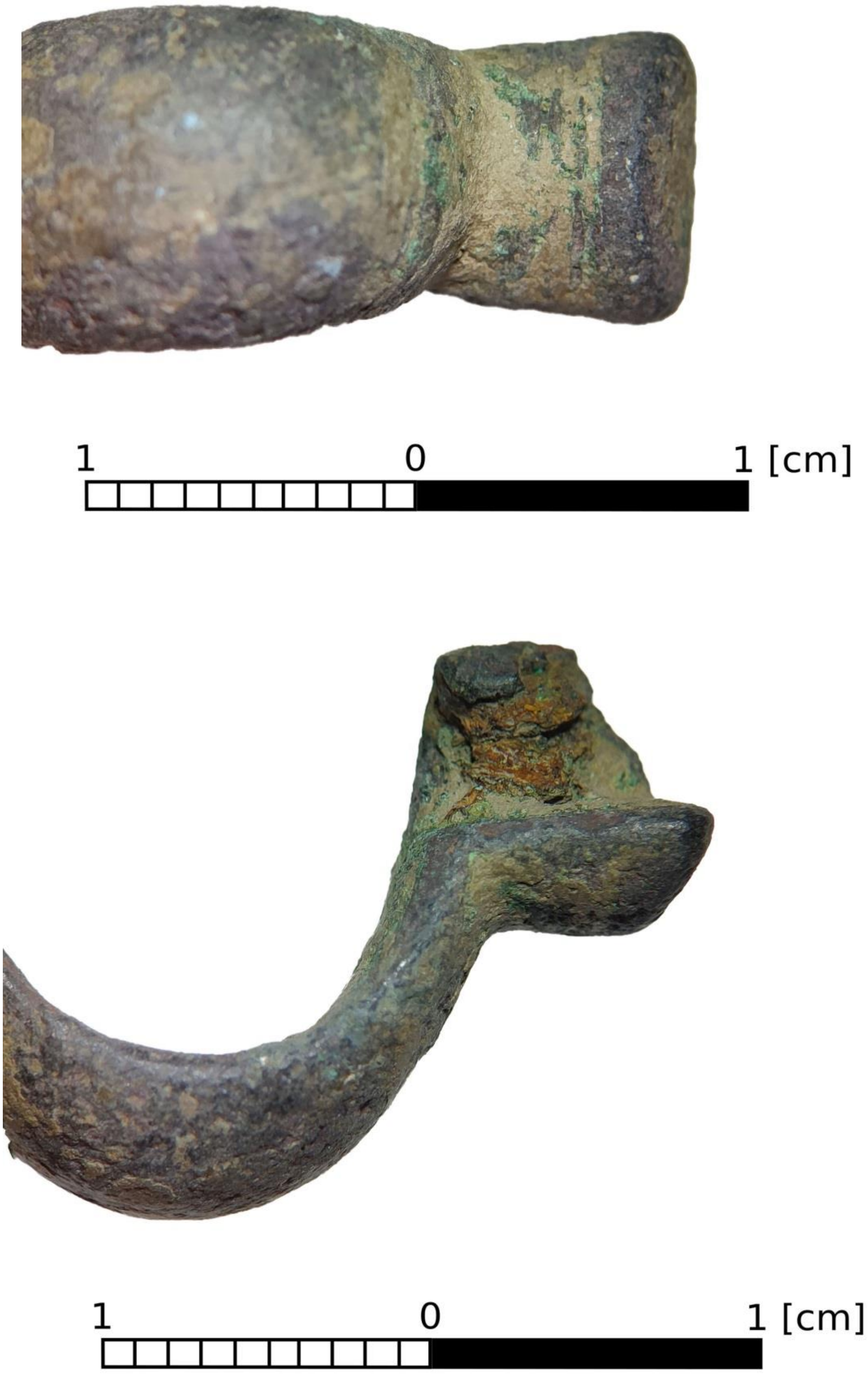


Figure 146. Eq-arm brooch, find no. 142 - before conservation - close up

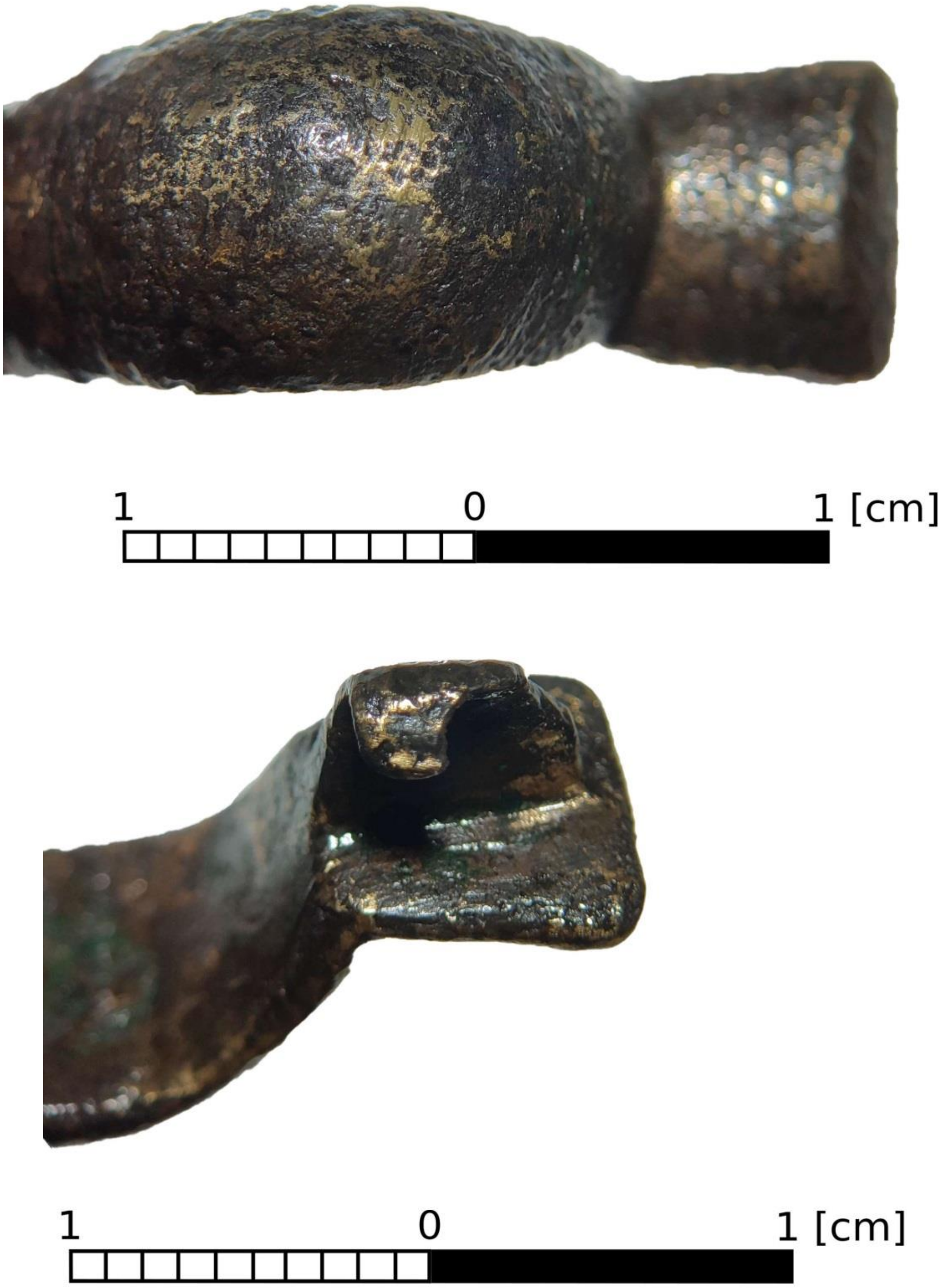


Figure 147. Eq-arm brooch, find no. 142 - after conservation - close up

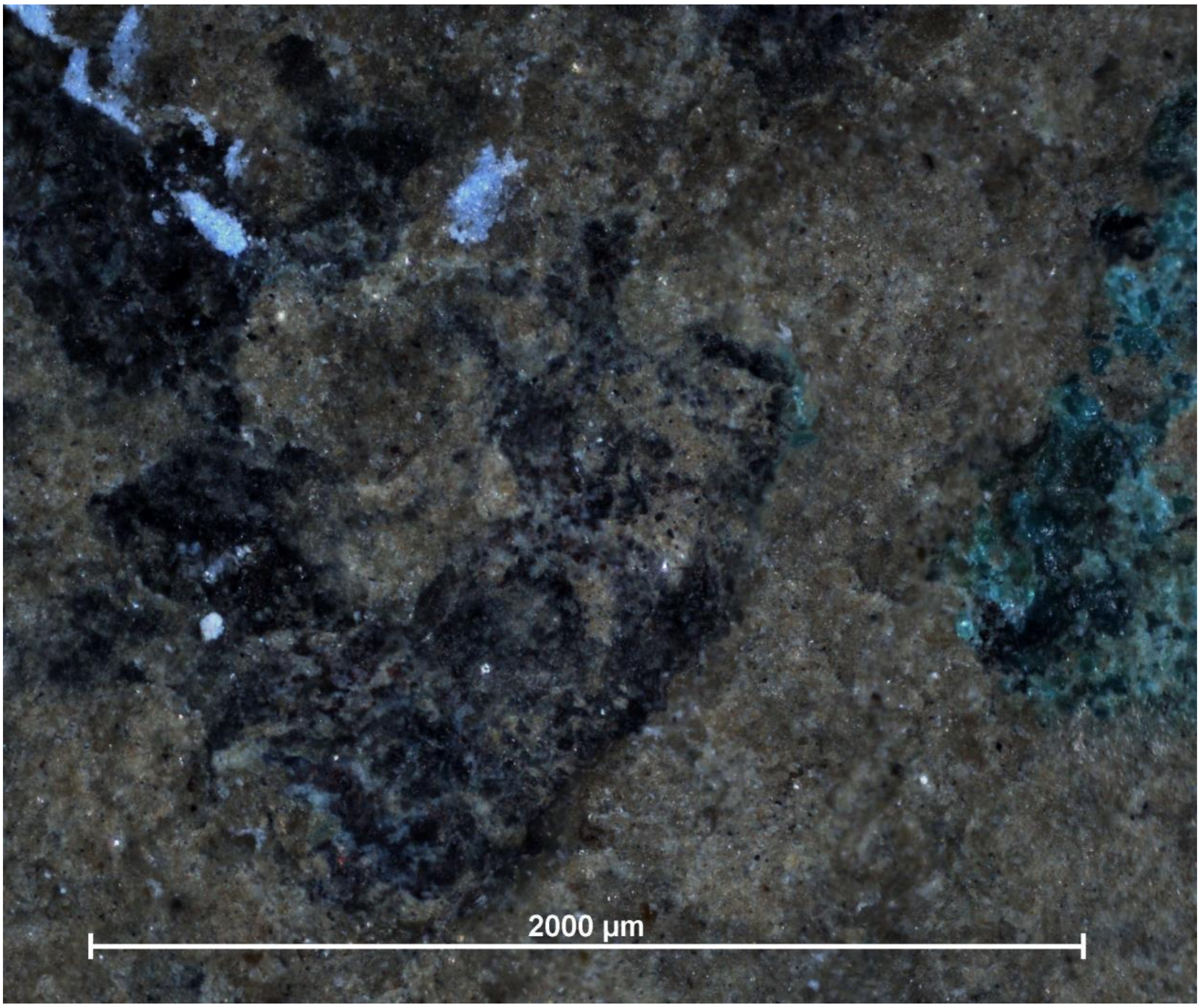


Figure 148. Eq-arm brooch, find no. 142 - before conservation - image from the Nikon Eclipse LV 150 N microscope

7.41. Fragment, find no. 143

Item	Fragment
Inv . No.	143
Site	Aska West Cemetery 2020
Dimensions [cm]	1,68 x 1,19 x 1,02
Weight [g]	0,839
Raw material	Cu alloy
Procedure	no. 1

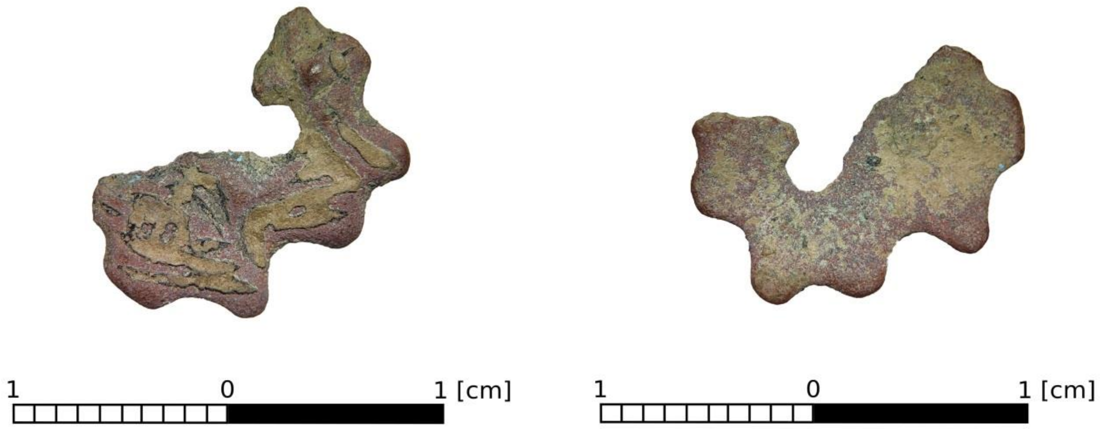


Figure 149. Fragment, find no. 143 - before conservation

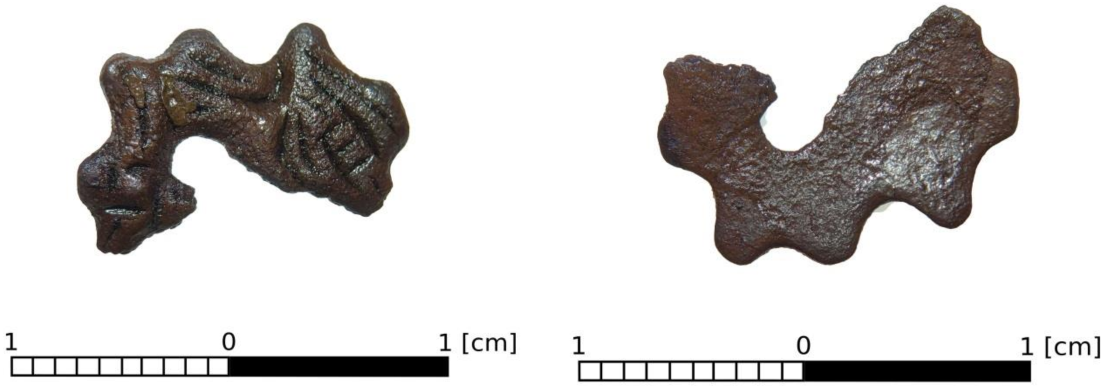


Figure 150. Fragment, find no. 143 - after conservation

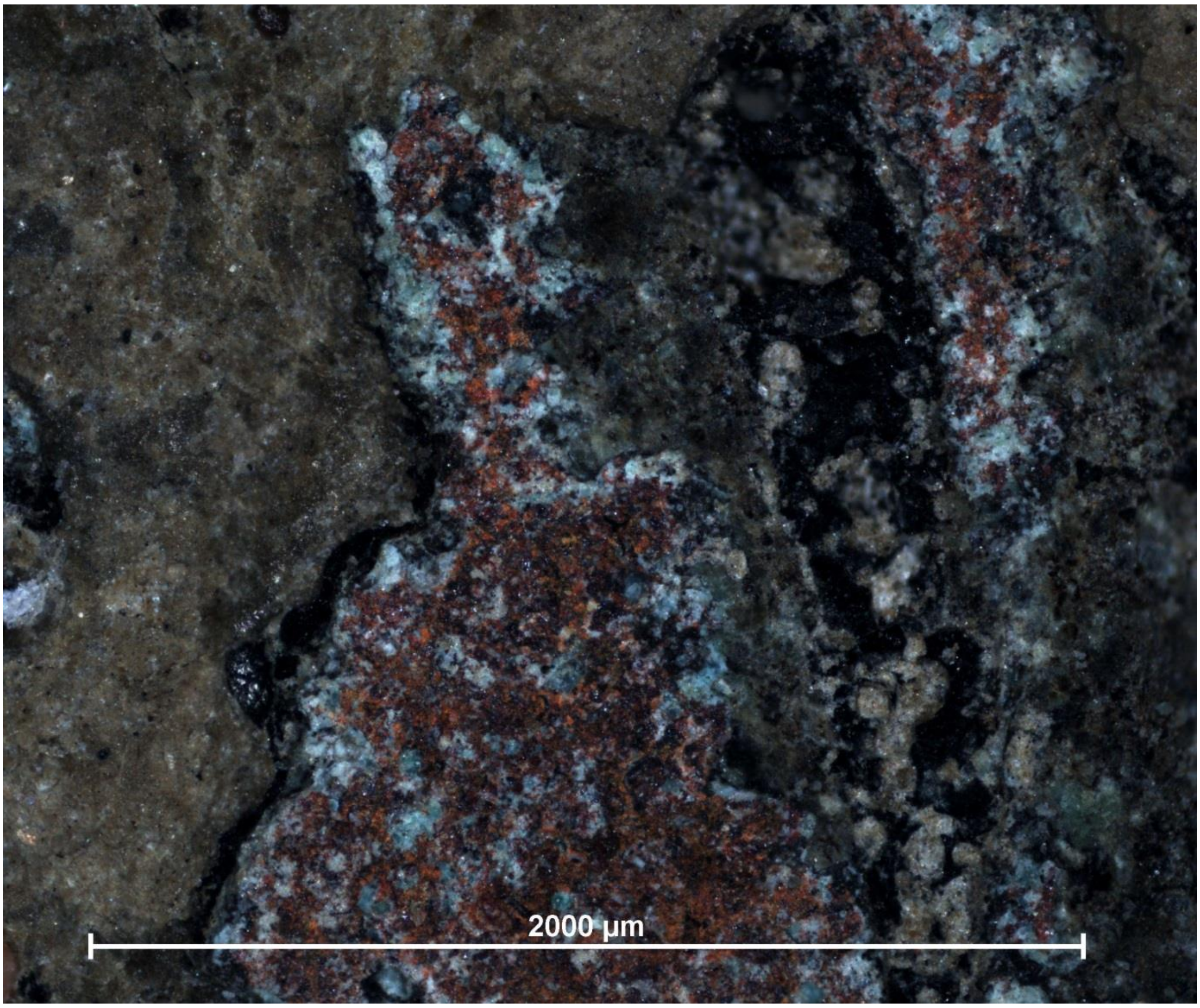


Figure 151. Fragment, find no. 143 - after conservation - image from the Nikon Eclipse LV 150 N microscope

7.42. Pendant, find no. 144

Item	Pendant
Inv . No.	144
Site	Aska West Cemetery 2020
Dimensions [mm]	length: 14.4; width 13.8, maximum thickness 4.4
Weight [g]	1,444
Raw material	Ag alloy
Procedure	no. 2

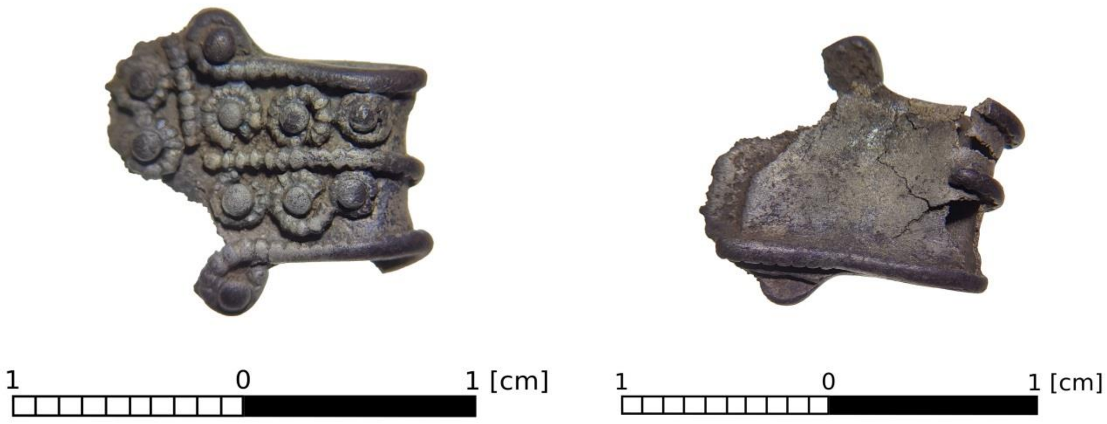


Figure 152. Pendant, find no. 144 - before conservation

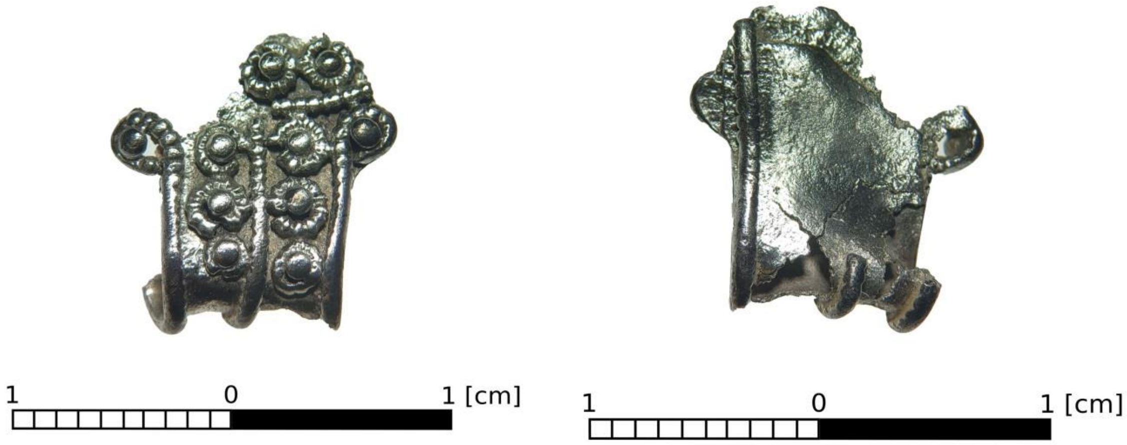


Figure 153. Pendant, find no. 144 - after conservation

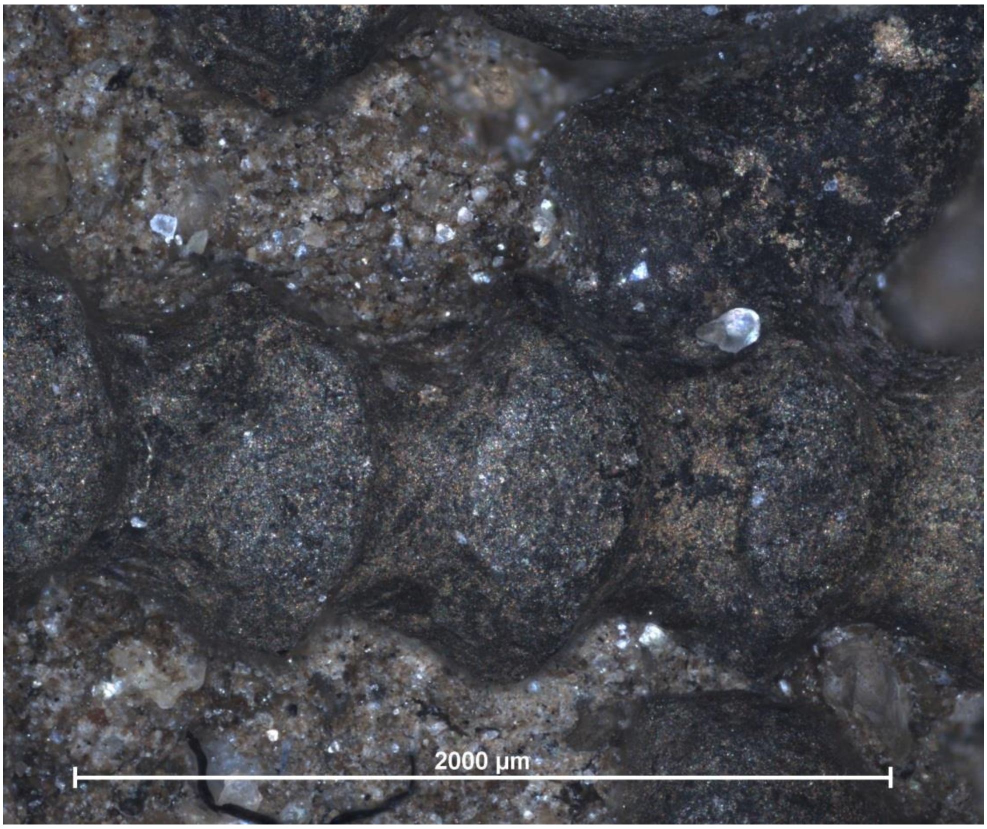


Figure 154. Pendant, find no. 144 - before conservation - image from the Nikon Eclipse LV 150 N microscope

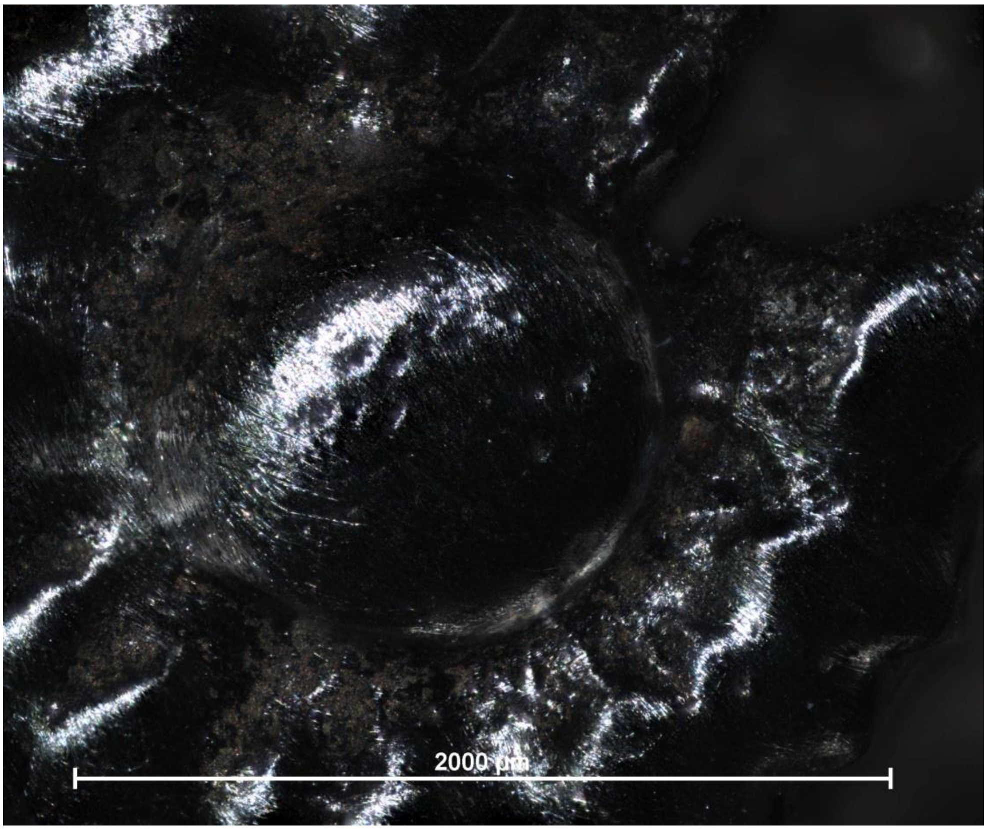


Figure 155. Pendant, find no. 144 - after conservation - image from the Nikon Eclipse LV 150 N microscope

7.43. Coin, find no. 145

Item	**Coin**
Inv . No.	145
Site	Aska West Cemetery 2020
Dimensions [cm]	maximum diameter: 1.80; thickness 0.18
Weight [g]	2,394
Raw material	Cu alloy with Ag layer
Procedure	no. 1

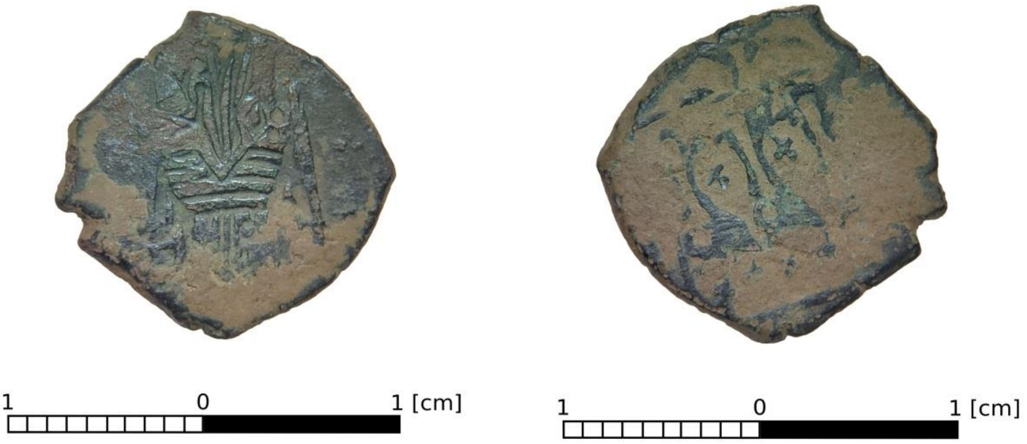


Figure 156. Coin, find no. 145 - before conservation

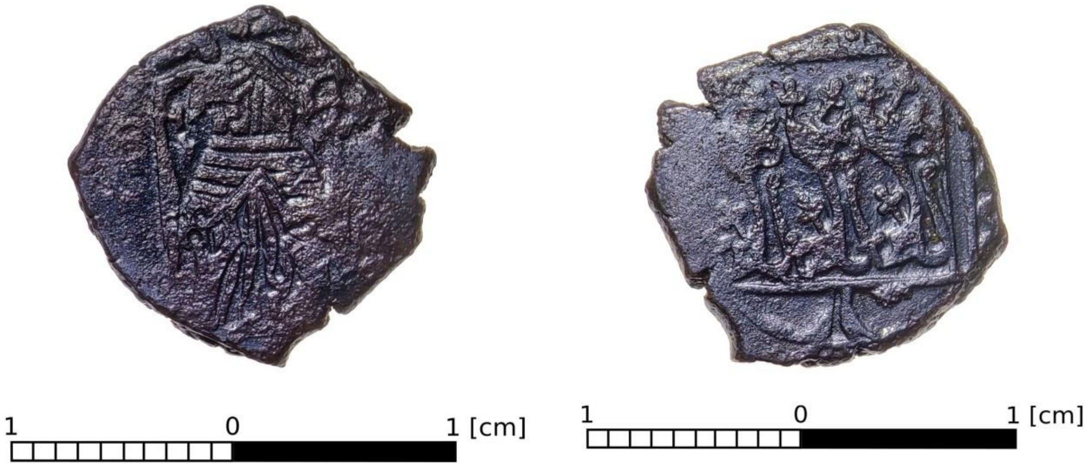


Figure 157. Coin, find no. 145 - after conservation

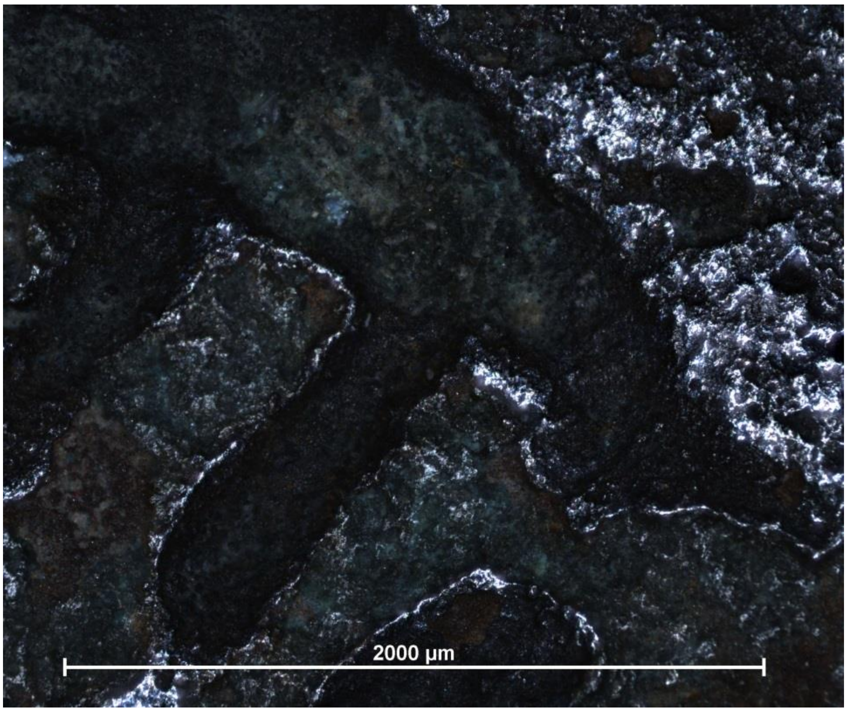
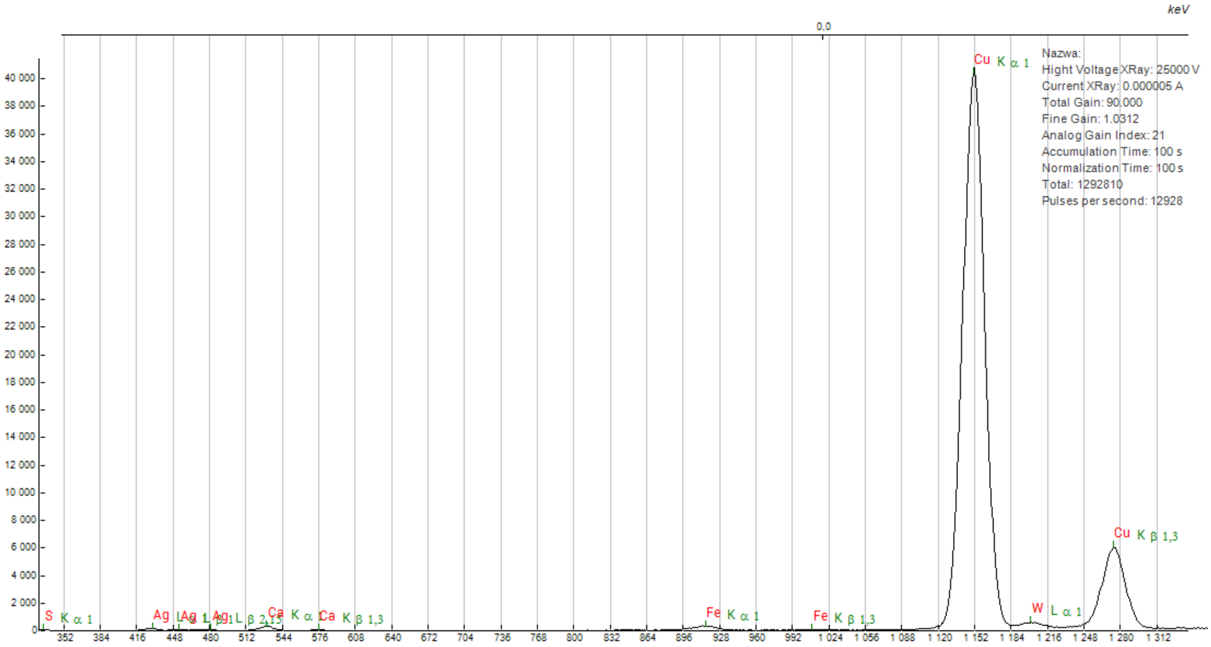


Figure 158. Coin, find no. 145 - after conservation - image from the Nikon Eclipse LV 150 N microscope



Nazwa:
Hight Voltage XRay: 25000 V
Current XRay: 0.000005 A
Total Gain: 90.000
Fine Gain: 1.0312
Analog Gain Index: 21
Accumulation Time: 100 s
Normalization Time: 100 s
Total: 1292810
Pulses per second: 12928

Figure 159. Coin, find no. 145 - spectrogram

7.44. Tortoise brooch, find no. 146

Item	Tortoise brooch
Inv . No.	146
Site	Aska West Cemetery 2020
Dimensions [cm]	1,53 x 1,04 x 0,49
Weight [g]	1,34
Raw material	Cu alloy
Procedure	no. 1

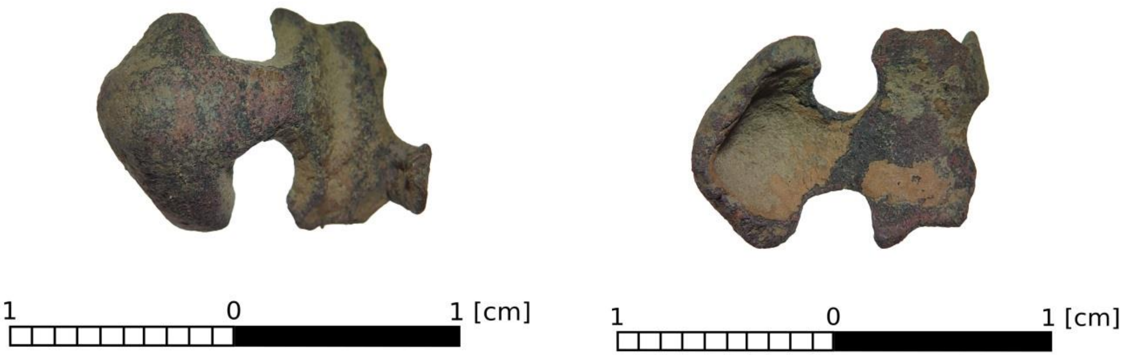


Figure 160. Tortoise brooch, find no. 146 - before conservation

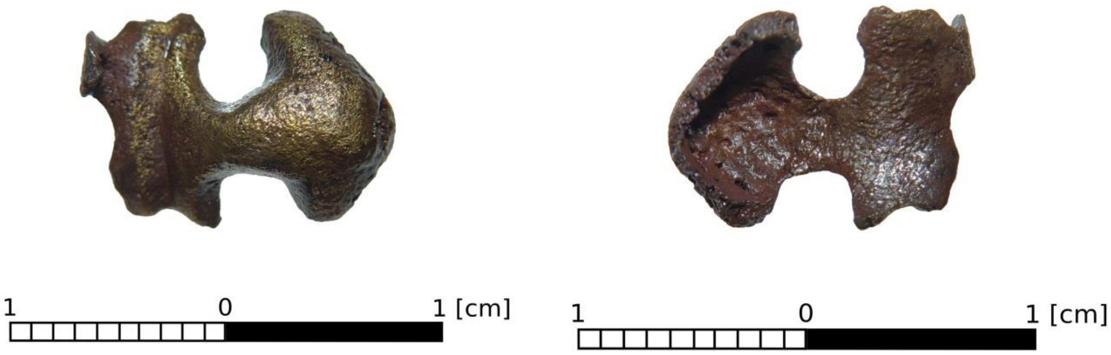
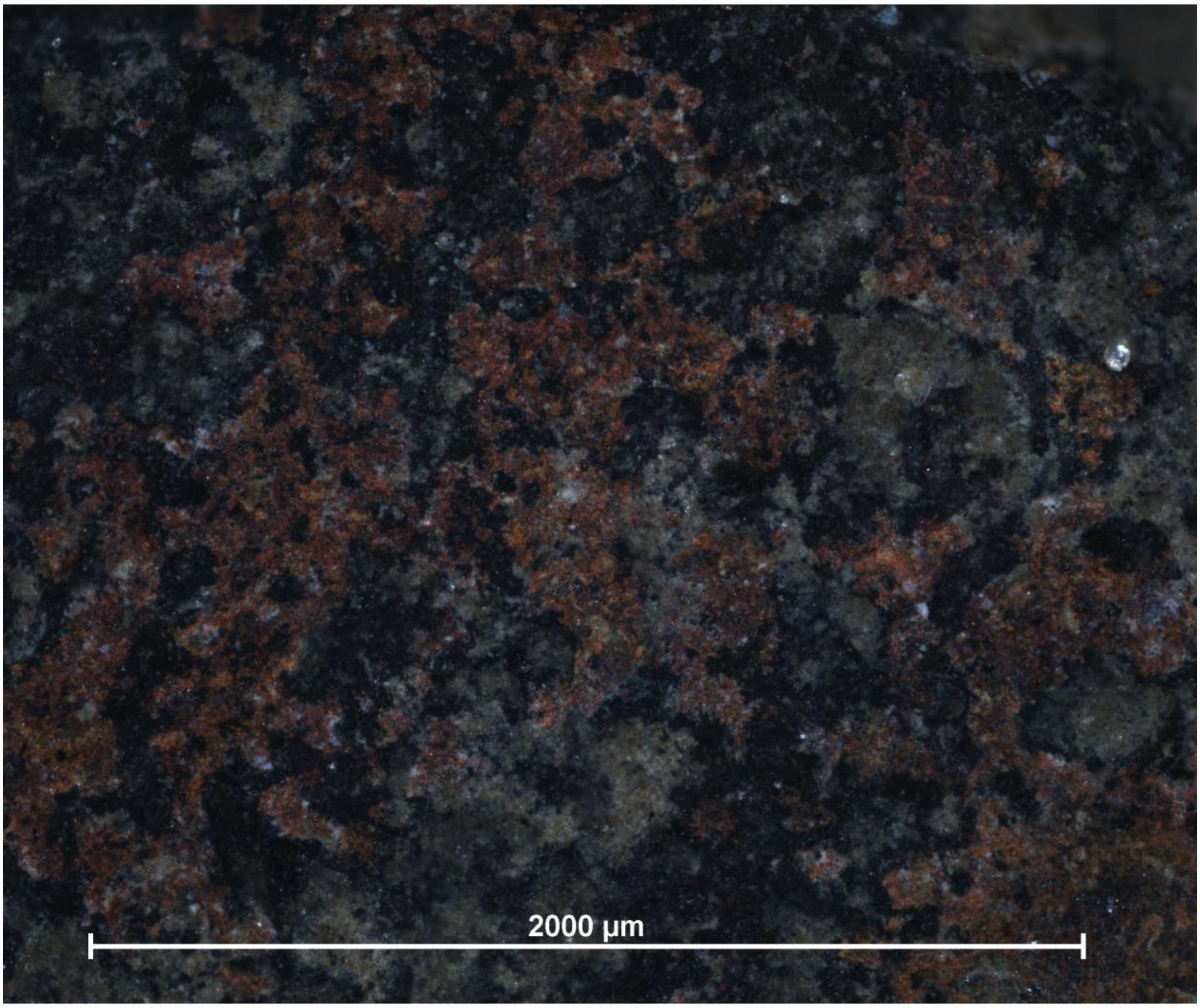


Figure 161. Tortoise brooch, find no. 146 - after conservation



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